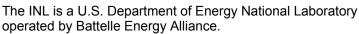
Plan

Next Generation Nuclear Plant (NGNP) Integrated Schedule Development Plan







NGNP INTEGRATED SCHEDULE DEVELOPMENT PLAN

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NGNP	Plan	ECR Number: 601101

REVISION LOG

Rev.	Date	Affected Pages	Revision Description
0	09/30/08	All	Initial Document
1	01/09/2012	Cover Page, Signature Page	Removed Limited Distribution, changed signature names

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NGNP Integrated Schedule Development Plan

PLN-2924

Approved by:

mmo

Gregory Jennings Author, Planning and Controls

Phillip Mills NGNP Engineering Director

19/2012 Date

Date

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ABSTRACT

The Next Generation Nuclear Plant Project is currently developing an integrated planning schedule that will account for major activities from the various technology development plans within R&D, the recently identified licensing path forward, and the engineering and design work performed during FY 2007 and FY 2008. Each of these areas had generated a schedule to meet their individual goals using technical requirements and acquisition strategies, current at the time of their respective development.

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ACRONYMS

- ACRS Advisory Committee on Reactor Safegaurds
- AGC Advanced Graphites Capsule (creep)
- AGR Advanced Gas Reactor
- ASME American Society of Mechanical Engineers
- COL Combined Operationg License
- CTF Component Test Facility
- DOE Department of Energy
- EIS Environmental Impact Statement
- ESP Early Site Permit
- EPC Engineering, Procurement, Construction
- HPS Hydrogen Production System
- HTGR High Tempature Gas Reactor
- IHX Intermediate Heat Exchanger
- NRC Nuclear Regulatory Commission
- NGNP Next Generation Nuclear Plant
- PSID preliminary design feeds the licensing process
- RFP Request for Proposal
- RPV Reactor Pressure Vessel
- SER Safety Evaluation Report
- WEC Westinghouse Electric Company

NGNP INTEGRATED SCHEDULE	R
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1. INTRODUCTION

The Next Generation Nuclear Plant (NGNP) Project is currently developing an integrated planning schedule that will account for major activities from the various technology development plans within R&D, the recently identified licensing path forward, and the engineering and design work performed during FY 2007 and FY 2008. Each of these areas had generated a schedule to meet their individual goals using technical requirements and acquisition strategies, current at the time of their respective development.

2. DESCRIPTION

The resulting integrated planning schedule is not resource loaded, yet logically ties technical and programmatic activities, and has already identified conflicts and interdependencies not previously recognized. This has also promoted more frequent interaction between the responsible NGNP technical staff to resolve these issues and to develop preventive measures to avoid such conflicts. The current integrated planning schedule contains different levels of granularity, depending on the maturity of each technical area. Fuels Development and Qualification is the most mature area and has a great deal of detail in terms of scope and sequence. High Temperature Materials, however, is still identifying performance requirements—highly dependent on reactor type and configuration—to define the necessary activities to support startup date of 2021. As the technologies mature and the project obtains CD-1 approval (or equivalent maturity), it will continue to be revised to keep it relevant and current.

3. ASSUMPTIONS

The following assumptions were made in the development of the schedule in Appendix A and may differ from those assumptions previously made in the development of earlier schedules. Some of these assumptions are fixed duration (time to review COL), some are milestones dates (selection of a design), and some are alluding to the order in which the corresponding activities need to take place, relative to other activities. The list of assumptions below does not represent a complete set and should not be interpreted as having considered and excluded some assumptions which NGNP has no knowledge as of yet.

- This schedule is not constrained by Fiscal Year Funding.
- Project schedule includes DOE 413.3 CD 1/2/3/4 milestones and deliverables based on those milestones as required by DOE.
- Critical path is calculated in this planning schedule as any activity with less than 30 days total float.
- This schedule assumes a 5 day work week, with typical holidays off.
- Schedule reflects the generation of an Engineering, Procurement, Construction (EPC) scope of work at the end of conceptual design for release at the start of preliminary design.

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- The Hydrogen Production System (HPS) is a separate scope of work and Request for Proposal (RFP) issued at preliminary design. (separate from EPC)
- The reactor type selection is considered a Department of Engery (DOE) decision milestone.
- Conceptual design will include both reactor designs until reactor decision milestone is met.
- Completion of preliminary design feeds the licensing process (PSID).
- Conceptual safety analysis work is based on the Westinghouse Electric Company (WEC) Conceptual Design Plan schedule.
- During conceptual design, draft procurement specifications for the Reactor Pressure Vessel (RPV) and Intermediate Heat Exchanger (IHX) will be issued to the fabricator to begin the long-lead procurement process.
- Baseline graphite Code Case review/approval and acceptance reflects beginning-of-life material properties.
- Graphite irradiation/creep (remainder-of-life) Code Case development will proceed with final R&D data input to the final Code Case as confirmatory data.
- High Temperature Metals preparation will work current and new issues for Hight Tempature Gas Reactor (HTGR) design-by-analysis rules and revise Subsection NH. Also, to avoid acceptance delays, pursue American Society of Mechanical Engineers (ASME) Committee partial acceptance of revised Subsection NH without full material data. Final acceptance then depends only on acceptance of remaining materials data, not the entire Code Case.
- Early Site Permit (ESP) Pre-application reviews with Nuclear Regulatory Commission (NRC) staff start in 2009.
- Site is selected by April 2010.
- The ESP requires 2 years to develop application (includes majority of field work).
- The NRC application acceptance review of the ESP requires 14 months.
- The Resolution of public comments on draft EIS takes 10 months.
- The NRC staff safety review of the ESP requires 15 months.
- Resolution of draft Safety Evaluation Report (SER) comments and Advisory Committee on Reactor Safegaurds (ACRS) review requires 5 months.
- Public hearing process for ESP requires 13 months.
- PSID development for the Combined Operating License (COL) requires 15 months.
- Application development for the COL requires 31 months.
- AGR-2 irradiation test results are adequate for COL development and submittal to the NRC.
- AGR-2, 3/4 and 5/6 PIE completion not required for COL submittal; assumed that these tasks will be finished prior to completion of the NRC technical review.
- AGR-7 and AGR-8 will be necessary during commercial operations (Post Operating License) Proof Test for Operations.
- AGR-2, 3, 4, 5, 6 PIE data will feed the final topical report.

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- NRC technical review of the COL takes 33 months.
- Public hearing process of the COL takes 12 months.
- NRC wil accept preliminary data without being codified.
- AGC-5 and AGC-6 are not needed for the NGNP's 800 degree C. outlet temperature. AGC-5 and AGC-6 will be needed for follow-on reactors with higher outlet temperatures.
- Advanced Gas Reactor (AGR) and Advanced Graphite Capsule (AGC) timelines are constrained by ATR availability.
- All experiments are successful, with no upset to planned acquisitions.
- Open items raised during the NRC review period that require plant operation to resolve will be addressed during the initial operating period.
- The receipt of a COL for NGNP will not necessarily result in certifying a nuclear system design appropriate for commercial operation. Additional effort to certify an HTGR nuclear system design for commercial application will be required.
- The schedule for development, design, construction, commissioning, and operation of the hydrogen plant for NGNP is based on the planning for the high-temperature electrolysis process.
- The design, construction and commissioning of the Component Test Facility (CTF) will be ready for component testing to support design and construction of NGNP and NRC certification of the nuclear system design(s).

4. APPENDICES

4.1 Appendices

Appendix A, NGNP Integrated Planning Schedule

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Appendix A

NGNP Integrated Planning Schedule

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PM235 Vester Management Pain 02-00-03 04-00-03 95.00 PM130 705.00 PM213 Vaste Management Pain 02-00-03 04-Peb-03 95.00 PM130 705.00 PM214 Vaste Management Pain 02-00-03 04-Peb-03 95.00 PM130 705.00 PM215 Draft Decommasions A Ecommission 02-00-03 04-Peb-03 95.00 PM120 705.00 PM223 VSNP Conceptual Design Complete 02-00-03 04-U-11 0.00 98355, 6830, 9834,	FM25 Value Numeration Prevention File 20:002 64:46:00 90:00 PM120 705:00 PM210 Waste Management File 20:0005 64:46:00 90:00 PM120 705:00 PM215 Oral Bootsmanning Prevention File 20:0005 64:46:00 PM120 705:00 705:00 PM215 Drad Bootsmanning Prevention File 20:0005 80:00 PM120 705:00 705:00 PM220 NGNP Conceptual Design Complete 20:40:00 64:85:00 88:85:00	Public Value Management Plan 02-00-03 04-Pe-93 90.00 PM130 709.60 PM213 Valate Management Plan 02-00-03 04-Pe-93 90.00 PM130 709.60 PM214 Valate Management Plan 02-00-03 04-Pe-93 90.00 PM130 709.60 PM2120 Valate Management Plan 02-00-03 04-Pe-93 90.00 PM130 709.60 PM223 Valate Management Plan 02-00-03 04-Pe-93 90.00 PM120 709.60 PM220 Valate Management Plan 02-00-03 04-WH1 0.00 8855, 89500, 0555, 89200, 0555, 89200, 9920, 99200, 992	PM235 Wask Manuscher Preuns Pale 03-004-01 04-Feb-39 80.00 PM150 P0130 P0550 PM216 Det Decommission & Decommiss		PM190	Configuration Management Plan	02-Oct-08	04-Feb-09	90.0d	PM150	PM120	709.0d			Configurat	ion Mana	gement P	Plan		11									
P4210 Wast Management Plan 02-00-03 04-Per-03 90.00 PH/120 778.00 778.00 778.00 FMI20 778.00 FMI20 778.00 FMI20	FM210 Waste Masgement Plas 02-00:08 04-e0-03 90:00 PM120 70:50 PM215 Ord B Doortesmination & Decommissions / Decompont / Decompissions / Decommissions / Decommissions / Dec	PM230 Veste Management Rein L0-Octob V-PR-0-9 90.00 PM130 T155.00 PM230 Xeal Decommission & Decommission. D2-Octob S-Per-0-9 90.00 PM130 T155.00 PM230 NSIVP Conceptual Design Complete D2-Octob S-Per-0-9 90.00 PM130 T155.00 PM230 NSIVP Conceptual Design Complete D-Au-11 0.00 ESSS, ESS0,	PM230 Veste Management Pain 10-Octob VP-PR0 PM130 T155 PM230 Xest Decommission & Decommission D2-Octob VP-Pr0-99 90.00 PM130 T155.00 PM230 NSIVP Conceptual Design Complete D2-Octob VP-Pr0-99 90.00 PM130 T155.00 Function D2-Octob VP-Pr0-99 90.00 PM130 T155.00 Function D2-Octob VP-Pr0-99 90.00 PM130 T155.00 Function D2-Octob VP-Pr0-99 90.00 PM130 PM130 T155.00 Function VP-Pr0-99 90.00 PM130 PM1300 PM140		PM200		02-Oct-08	04-Feb-09	90.0d	PM150	PM120	709.0d			Preliminar	y Hazard	Analysis	Report		<u>†</u> ŀ									
PM236 Dref Decommission D2-Oct-00 D-FR-29 9.0.0 PM130 705.00 PM220 NSNP Conceptus Design Complete D4-Jul-11 0.00 B255, B230, B255, B230, B250, B250, B250, B250, C10,10,10,22, B2, B250,	FM230 Resolution Type Detection 02-00-06 D=FR=30 90.00 FM130 <	P42:9 Orall Decommission: 0.20-00-80 0.4-Fe-30 90.00 PM120 719.00 PM220 NGNP Conceptual Design Complete 04-04-11 0.00 823.8, 083.0, 083.8, 083.0, 043.0, 003.0, 043.0, 043.0, 043.0, 043.0, 043.0, 043.0, 043.0, 043.0, 043.0, 0	P4236 Card Decommission & Decommission & Decommission & Decommission & Decommission & Pais PM230 NGNP Conceptual Design Complete D4-Jul 1 D Col SB35, SB30, SB35, SB35, SB35, SB35,		PM205	Waste Minimization/Prevention Plan	02-Oct-08	04-Feb-09	90.0d	PM150	PM120	709.0d		•—	Waste Min	Imization	/Frevent	ion Plan											
PM220 NSNP Conceptual Design Complete D-Jul-11 0.00 RE325, 0830, 0840, 0840, 0840, 0844, 0840, 0844,	PM220 NSNP Conceptual Design Complete J B4-Ju-11 Q.0 B5335, B530, B5335, B5305, B5335, B530, B5335, B530, B530, B5335, B530, B530, B5335, B530, B530, B5335, B530, B530, B5335, B530, B530, B5355, B530, B530, B530, B530, B5355, B530, B530, B530, B530, B530, B5355, B530,	PM220 NSNP Conceptual Design Complete D4-Ju-11 0.00 B8328, 0830, 0834, 0830, 0834, 0830, 08344, 08344, 08344, 08344, 08344, 08344, 08344, 08344, 08344, 083	PM220 NBNP Conceptual Design Complete S4-Ju-11 0.00 B8236, 8830, 8840,		PM210	Waste Management Plan	02-Oct-08	04-Feb-09	90.0d	PM150	PM120	709.0d			Waste Ma	nagement	tPlan												
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Project Cost & Schedule 01-Oct-OP 0.00 LR140, LR250 171.0c Reador Type Detection PM30 Reador Type Detection 01-Oct-OP 0.00 LR140, LR250 171.0c Reador Type Detection C.Q.10.10.102.01 Project Cost & Schedule 01-May-10 25.00, PM155, PM150, P</td><td>PM230 Reador Type Detection 01-02-02* 0.00 LR140, LR250 171.0c Reador Type Detection C.Q. 10.10, 10.22.01 Project Cost & Schedule 01-03-02* 0.00 LR140, LR250 171.0c Reador Type Detection PM230 Reador Type Detection 01-03-02* 0.00 LR140, LR250 171.0c Reador Type Detection C.Q. 10.10, 10.22.01 Project Cost & Schedule 01-Mayo3 24-Mayo11 772.0d 69.0d PM235 Instgrate Schedule 01-Mayo3 24-Mayo11 772.0d 69.0d PM236 Cost & Schedule 01-Mayo3 24-Mayo11 772.0d 69.0d PM236 Cost & Schedule 01-Mayo3 24-Mayo11 89.0d Feb 30.0d PM236 Cost & Schedule 01-Mayo3 24-Mayo11 89.0d Feb 30.0d PM236 Cost & Schedule Buyonf 01-Mayo3 24-Mayo11 79.0d Feb 30.0d PM245 Cost & Schedule Buyonf 02-Ocide 84.0d Feb 30.0d Feb 30.0d PM245 Cost & Schedule Buyonft</td><td></td><td>PM215</td><td>Draft Decontamination & Decommissionin</td><td>02-Oct-08</td><td>04-Feb-09</td><td>90.0d</td><td>PM150</td><td>PM120</td><td>709.0d</td><td></td><td></td><td>Draft Deco</td><td>ntaminat</td><td>ion & Der</td><td>commissio</td><td>oning Pl</td><td>lan</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td>	FM220 Reactor Type Delection 01-00-09 0.06 LR140, LR250 171.06 Reactor Type Delection 01-00-09 Reactor Type Delection 01-00-01 Reactor Type Delection 01-00-01 <td>PM30 Reador Type Detection 01-Oct-OP 0.00 LR140, LR250 171.0c Reador Type Detection C.Q.10.10.102.01 Project Cost & Schedule 01-Oct-OP 0.00 LR140, LR250 171.0c Reador Type Detection PM30 Reador Type Detection 01-Oct-OP 0.00 LR140, LR250 171.0c Reador Type Detection C.Q.10.10.102.01 Project Cost & Schedule 01-May-10 25.00, PM155, PM150, P</td> <td>PM230 Reador Type Detection 01-02-02* 0.00 LR140, LR250 171.0c Reador Type Detection C.Q. 10.10, 10.22.01 Project Cost & Schedule 01-03-02* 0.00 LR140, LR250 171.0c Reador Type Detection PM230 Reador Type Detection 01-03-02* 0.00 LR140, LR250 171.0c Reador Type Detection C.Q. 10.10, 10.22.01 Project Cost & Schedule 01-Mayo3 24-Mayo11 772.0d 69.0d PM235 Instgrate Schedule 01-Mayo3 24-Mayo11 772.0d 69.0d PM236 Cost & Schedule 01-Mayo3 24-Mayo11 772.0d 69.0d PM236 Cost & Schedule 01-Mayo3 24-Mayo11 89.0d Feb 30.0d PM236 Cost & Schedule 01-Mayo3 24-Mayo11 89.0d Feb 30.0d PM236 Cost & Schedule Buyonf 01-Mayo3 24-Mayo11 79.0d Feb 30.0d PM245 Cost & Schedule Buyonf 02-Ocide 84.0d Feb 30.0d Feb 30.0d PM245 Cost & Schedule Buyonft</td> <td></td> <td>PM215</td> <td>Draft Decontamination & Decommissionin</td> <td>02-Oct-08</td> <td>04-Feb-09</td> <td>90.0d</td> <td>PM150</td> <td>PM120</td> <td>709.0d</td> <td></td> <td></td> <td>Draft Deco</td> <td>ntaminat</td> <td>ion & Der</td> <td>commissio</td> <td>oning Pl</td> <td>lan</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> 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C.Q. 10.10.10.02.01 Project Cost & Bchedule 01-May-08 25-May-11 800.00 PM145 PM220 69.05 PM235 Integrated Schedule 01-May-08 25-May-11 800.00 PM145 PM220 69.05 PM240 Cost & Schedule Bupport 01-May-08 25-May-11 800.00 PM145 PM220 69.05 C.Q. 10.10.10.2.02 Quality Assurance 02-Oct-08 08-Jun-11 685.00 98.05 C.G. 10.10.10.2.02.01 Polect Cost & Schedule Bupport PM245 Quality Assurance Program Plan 02-Oct-08 08-Jun-11 700.00 PM150 PM220 59.05 C.Q. 10.10.10.2.02 Guality Level Determinations 02-Oct-08 08-Jun-11 700.00 PM150 PM220 59.06 C.Q. 10.10.10.2.02.3 Becurity 02-Oct-08 10-Jun-09 180.00 PM255 S79.00 579.00 579.00 F78.00	C.Q.10.10.10.02_01 Project Cost & Schedule O1-May-08 25-May-11 773.0 One 69.00 PM235 Integrated Schedule 01-May-08 25-May-11 800.00 PM145 PM220 69.00 PM240 Cost & Schedule Support 01-May-08 25-May-11 800.00 PM145 PM220 69.00 C.Q.10.10.10.02_02 Qualty Assurance 02-Oct-08 09-Jun-11 68.00 99.00 C.Q.10.10.10.02.02 Gualty Assurance C.Q.10.10.10.02.02 Gualty Assurance PM250 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<td>C.Q. 10.10.10.02.01 Project Cost & Schedule O1-May-08 25-May-11 800.00 PM145 PM220 69.05 PM235 Integrated Schedule O1-May-08 25-May-11 800.00 PM145 PM220 69.05 PM240 Cost & Schedule Bupport O1-May-08 25-May-11 800.00 PM145 PM220 69.05 C.Q. 10.10.10.02.02 Quality Assurance 02-Oct-08 08-Jun-11 685.06 99.06 99.06 C.G. 10.10.10.02.02 C.G. 10.10.10.02.02 C.G. 10.10.10.02.02 C.G. 10.10.10.02.02 C.G. 10.10.10.02.02 C.G. 10.10.10.02.03 PM245 C.G. 10.10.10.2.02 C.G. 10.10.10.02.03 PM245 C.G. 10.10.10.2.02 C.G. 10.10.10.02.03 PM245 C.G. 10.10.10.2.03 PM150 PM120 99.04 C.G. 10.10.10.02.03 Guality Assurance C.G. 10.10.10.02.03 C.G. 10.10.02.03 <t< td=""><td></td><td>PM220</td><td>NGNP Conceptual Design Complete</td><td></td><td>04-Jui-11</td><td>0.04</td><td>0E335, 0E340, 0E345, 0E360, 0E135, 0E200, 0E260, PM155, PM170, PM175, 9E285, NH0090, HT0245, HP0355, PC3100, BOP075, 0E366, 0E355, 0E360, PM010, MAT0365, PE125, PM200, PM135, PM250, PM265, PM250, PM260,</td><td>PM120, LR260</td><td>41.0d</td><td></td><td></td><td></td><td></td><td>*•• NG</td><td>SNP Cont</td><td>eptual I</td><td>Désigh</td><td>Compile</td><td>e</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<></td>	C.Q.10.10.10.02.01 Project Cost & Schedule 01-May-08 25-May-11 800.00 PM220 69.04 PM235 Integrated Schedule 01-May-08 25-May-11 800.00 PM145 PM220 69.04 PM240 Cost & Schedule Support 01-May-08 25-May-11 800.00 PM145 PM220 69.04 C.Q.10.10.10.02.02 Quality Assurance 02-Oct-08 09-Jun-11 695.04 99.04 0.04 III / Assurance Cost & Schedule Support PM245 Quality Assurance 02-Oct-08 09-Jun-11 700.04 PM120 98.04 0.04 III / Assurance Program Plan 02-Oct-08 09-Jun-11 700.04 PM120 98.04 0.04 III / Assurance Program Plan 02-Oct-08 09-Jun-11 700.04 PM120 98.04 0.04 III / Assurance Program Plan 02-Oct-08 09-Jun-14 700.04 PM150 PM220 65.04 0.04 III / Assurance Program Plan 0.02 Oct-06 09-Jun-19 180.04 PM260 579.04 0.04 III / Assurance Program Plan 0.02 Oct-06 10-Jun-09 180.04 PM265 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LR260</td><td>41.0d</td><td></td><td></td><td></td><td></td><td>*•• NG</td><td>SNP Cont</td><td>eptual I</td><td>Désigh</td><td>Compile</td><td>e</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>		PM220	NGNP Conceptual Design Complete		04-Jui-11	0.04	0E335, 0E340, 0E345, 0E360, 0E135, 0E200, 0E260, PM155, PM170, PM175, 9E285, NH0090, HT0245, HP0355, PC3100, BOP075, 0E366, 0E355, 0E360, PM010, MAT0365, PE125, PM200, PM135, PM250, PM265, PM250, PM260,	PM120, LR260	41.0d					*•• NG	SNP Cont	eptual I	Désigh	Compile	e							
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Form 412.09 (Rev. 10)

Idaho National Laboratory

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INTEGRA	ATED PLANNING	SCH	DULI	E												9-29	-200	8				
	Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	200	38 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	202
РМ270	NGNP Prelminary Design Start	D6-Jul-11		0.06	MTH276, PM120	PM275, PM280, PM295, PM280, 05180, 04560, 034665, 05395, 05400, NH0715, NH0730, NH0720, NH0730, NH0725, NH0730, PC0425, PC0420, PC0425, PC0420, PC0425, PC0420, 05415, 05410, 05415, 05420, 05415, 05420, 05415, 05420, 05415, 05420, 05415, PM355, PM360, PM375, PM360, PM375, PM360, PM375, PM360, PM320, PM355, PM320, PM325, PM320, PM325, PM320, PH155, PE150, 05170, 05375, 05155, 05330, PR100, 05460, 05460, 05355, 05155, 05350, PR100, 05460, 05460, 05355, 05350, PR100, 05460, 05460, 05355, 05350, PR100, 05460, 05460, 05355, 05350, 05350, 05355, 05350, 055	90.0d					NP Preim	nary Desi	ph Start								
PM275	Update Project Execution/Management P	05, 14, 14	08-Nov-11	80.04	PM270	PM310	650.0d								anamani Di							
PM280	Update Acquisition Strategy	05-Jul-11	08-Nov-11		PM270	PM310	650.0d			11		Ubdate A	auisition (- Strategy	agement Pi	-						
PM285	Update Hazards Profile Screening Checklist		08-Nov-11		PM270	PM310	650.0d	·		******	1-32	Update H	zards Pro	file Screen	ning Checki 1	lst						
PM290	Update Risk Management Plan	06-Jul-11	08-Nov-11		PM270	PM310	650.0d			11		Dipdate Ri	sk Manao	ement Plan	1							
PM300	Training	06-Jul-11	26-Mar-13		PM270	PM310	290.0d			11		1	Train	no.	-							
PM305	TRL 6 Achieved		17-Dec-13		HP8730, PM120	PM310	100.0d			11					chleved							
PM3+D	NGNP Preliminary Design Complete		25-Apr-14	0.04	HP0430, PC0455, PM305, PM275, PM306, PM275, PM3080, PM285, PM280, 02580, 02495, 02490, NH0745, HT0480, 02430, 02440, 02430, 02445, 02430, 02445, 92445, 02455, PC04460, NH0750, PM340, PM345, PM340, PE140, PM340, PM345, PM340, PM345, PM335, PM330, PM335, PM330, PM330, P2155, P2110, 024710, MAT0490	PE240, PE242, NH8755, NH8750, NH8755, NH8760, NH8775, NH8780, NH8755, NH8780, NH8805, HT9510, HT8515, PC8458, PC8440, PC8458,	7.04								4P Freimin	ary Design	Complete					
	01 Project Cost & Schedule	06-Jul-11	22-Oct-13	600.0d			140.0d					Щ				Project Co	st & Sched	ule				
PM315	Integrated Schedule	05-Jul-11	22-Oct-13	600.0d	PM270	PM310	140.0d			11	•====	11	DI/ filian		i Sched <mark>u</mark> le							
naining Level of Effo ual Level of Effort	ort Actual Work Remaining Work	Critical R Start Cor	emaining Wo	ark			Page 3 of 5	5					SK TIDET: /	All Activiti	еь						c) Primaver	

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Revision:	1	
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PI	NTEGR/	ATED PLANNING	SCHE	DUL	=											9-29	-200	8				
		Activity Name	Start	Finish	Planned Predecessors Duration	Successors	Total Float	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	-
	PM320	Cost & Schedule Support	06-Jul-11	22-Oct-13	600.0d PM270	PM310	140.0d				-	1	<u> </u>	cost & S	thedule Bu	poort						_
		02 Quality Assurance	06-Jul-11	22-Oct-13	600.0d		140.0d					1!!				Quality As	surance					
	PM325	Update QAPP	06-Jul-11	08-Nov-11	90.0d PM270	PM310	650.0d				-	Update Q	APP									
	PM330	Quality Level Determinations	06-Jul-11	13-Mar-12	180.0d PM270	PM310	560.0d			÷		Qualit	l evel Det	minutio	ns.							
	PM335	Qualty Support/Surveilances	05-Jul-11	22-Oct-13	600.0d PM270	PM310	140.0d					TT		quality S	upport/Sur	veillances						
	C.Q.10.10.10.03		06-Jul-11	08-Nov-11	90.0d		650.0d					dig.10.10	10.03.03	security								
	PM340	Update Preliminary Cyber Security Plan	06-Jul-11	08-Nov-11	90.0d PM270	PM310	650.0d					+++	eliminary (urity Plan							
	PM345	Update Preliminary Facility/Project Security Plan		08-Nov-11	90.0d PM270	PM310	650.0d				-4	Ubdate Pr	eliminary F	cility Pr	aject Secur	rity Plan						
	PM350	Update Preliminary Vulnerability Assess	06-Jul-11	08-Nov-11	90.0d PM270	PM310	650.0d	-1		lt	1-22	Update Pr	eliminary \	/unerable	ty Assessr	ment						
	C.Q.10.10.10.03	.04 EPC Scope of Work	06-Jul-11	12-Oct-11	71.0d		669.0d				-	c. Q. 10.10.	10.03.04 1	PC Sco	e of Work							
	PM355	EPC Scope of Work	06-Jul-11	17-Aug-11	31.0d PM270	PM360	669.0d					PO Scope	of Work									
	PM360	INL EPC SOW Review	18-Aug-11	14-Sep-11	20.0d PM355	PM365	669.0d					N EPC S	W Review									
	PM365	DOE EPC Review & Project Validation	15-8ep-11	12-Oct-11	20.0d PM360	PM370	669.0d								lidation							
	PM370	DOE or PPP Issues EPC SOW & RFP		12-Oct-11	0.0d PM365	PM310	669.0d	-1		1	+ 1	DOE EPC DOE or PP	P Issues E	C SOW	& RFP							
	C.Q.10.10.10.03	.05 HP3 RFP	06-Jul-11	13-Mar-12	180.0d		200.0d				1 	C.Q.1	.10.10.03	с нра	RFP							
	PM375	Develop RFP	06-Jul-11	27-Sep-11	60.0d HP8265, PM270	PM380	200.0d					Develop RF	÷									
	PM380	Issue RFP		27-Sep-11	0.0d PM375	PM385	200.0d				🗣	Develop Rf Issue RFP										
	PM385	Bidders Evaluate RFP	28-Sep-11	20-Dec-11	60.0d PM380	PM390	200.0d					Bidders i		e								
	PM390	Receive Proposals		20-Dec-11	0.0d PM385	PM395	200.0d	-1		t	1	Receive	Proposals									
	PM395	Evaluate Proposals	21-Dec-11	13-Mar-12	60.0d PM390	PM396	200.0d						e Propos	8								
	PM396	Award Design Contract		13-Mar-12	0.0d PM395	HP8430, HP8435	200.0d						Design Co	tract								
	C.Q.10.10.10.04 FI	nal Design PM Support	28-Apr-14	21-Mar-17	757.0d		2105.0d					Π					C.Q.1	0.10.10.04	Final Desi	ign PM a	upport	
	PM400	NGNP Final Design Start	28-Apr-14		0.0d PM310, PM130	8E500, 8E505, 8E510, 0E515, 8E520, 0E525, 8E525, 0E530, PM435, PM430, PM455, PM480, PM455, PM460, PM455, PM410, PM415, PM420, PM470, PM475, PM480, 8E455, 8E470, 8E475, 8E480	59.Dd							- •3	NP Final D	esign Start						
	PM405	TRL 7 Achieved		28-Nov-16	0.0d 8E490		2187.0d			+	++	<u> </u> ₩	·				TRL 7 A					
	PM410	Update Project Execution/Management P	28-Apr-14	29-Aug-14	90.0d PM400	PM440	669.0d								Update Pri	oject Execu	tion/Manag	ement Plar	1			
	PM415	Update Acquisition Strategy	28-Apr-14	29-Aug-14	90.0d PM400	PM440	669.0d								Update Ac	quisition St	bategy					
	PM420	Update Risk Management Plan	28-Apr-14	29-Aug-14	90.0d PM400	PM440	669.0d							•••	Update Ris	sk Manager						
	PM430 PM435	Environmental, Safety & Health Training	28-Apr-14 28-Apr-14	30-Dec-16	700.0d PM400 180.0d PM400	PM440 PM440	59.0d					<u> </u>	<u></u>		Trair in		Environ	mental, Sa	ety & Heal	th		

NGNP INTEGRATED SCHEDULE DEVELOPMENT PLAN Effective Date:

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NP	INTEGR/	ATED PLANNING	SCH	DUL	E												9-29-	-200	8				
D		Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	PM440	NGNP Final Design Complete		21-Mar-17	0.04	NH0800, HT0555, PC0510, BOP190, PM410, PM415, PM420, 08475, HP0560, HP0540, 9250, 08510, 08515, 08530, 08515, 08535, 08515, PM420, PM475, PM445, PM430, PM445, PM450, PM445, PM450, PM445, PM450, PM445, PM450, PM465, 08455, 08470, 08485, 08495, P180, PE180, FL00665	PM135, LR341	2.04											Final Des	gn Comple	te		
	C.Q.10.10.10.04.	.01 Project Cost & Schedule	28-Apr-14	30-Dec-16	700.0d			59.0d							│ ┯┿┿			C.Q.10.1	10.10.04.01	Project C	ost & Sche	dule	
	PM445	Integrated Schedule	28-Apr-14	30-Dec-16	700.0d	PM400	PM440	59.0d										Integrate	d Schedul	e			
	PM450	Cost & Schedule Support	28-Apr-14	30-Dec-16	700.0d	PM400	PM440	59.0d											Ichedule S				
	C.Q.10.10.10.04.	.02 Quality Assurance	28-Apr-14	30-Dec-16	700.0d			59.0d			it		t#	††				C.Q.10.1	0.10.04.00	2 Quality A	ssurance		
	PM455	Update QAPP	28-Apr-14	29-Aug-14	90.0d	PM400	PM440	669.0d							- ii	pdate QAI	PP						
	PM460	Quality Level Determinations	28-Apr-14	02-Jan-15	180.0d	PM400	PM440	579.0d			11		lii	i		Quality	Level Deter	minations					
	PM465	Quality Support/Survellances	28-Apr-14	30-Dec-16	700.0d	PM400	PM440	59.0d						: I					Support/Su	rveillances			
	C.Q.10.10.10.04.		28-Apr-14	29-Aug-14	90.0d			669.0d					11			0.10.01	10.04.03 8	an units					
	PM470	Draft Final Cyber Security Plan	28-Apr-14	29-Aug-14	90.0d	PM400	PM440	669.0d			H	+!-	t::	! <u></u>	- D	raft Final (Cyber Secu	rity Plan					
		Draft Final Facility/Project Security Plan	-	29-Aug-14	90.0d	PM400	PM440	669.0d					111		- 🖬 🖥	raft Final F	acility/Pro	ect Securit	y Plan				
	PM480	Draft Final Vulnerability Assessment		29-Aug-14		PM400	PM440	669.0d									Vulnerability						
		onstruction PM Support	-	10-Dec-20	972.0d			0.0d										-				C.Q.10.1	0.10.04

Remaining Level of Effort Actual Work Critical Remaining Work	Page 5 of 55	TASK filter: All Activities
Actual Level of Effort Remaining Work C Start Constraint		(c) Primavera Systems, Inc
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Idaho National Laboratory

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		Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	200	8 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	:
	PMSDD	Btart Construction	22-Mar-17		0.04	BOP195, PC3515, HT3560, NH0805, PM135	PM505, NH0820, NH0825, NH0880, NH0835, NH0840, NH0845, NH0850, NH0845, NH0850, NH0855, NH0860, NH0855, NH0860, NH0855, NH0800, NH0855, P00550, P00860, P00855, P00860, P00855, P00850, P00855,	2.04										Sta	rt Construct	ion			
	PMSDS	Program Management Support	22-Mar-17	25-Feb-20	765.0d		PM520	207.0d			11		Π					-	_		Prog	ram Manage	emen
	PM510 PM520	Training NGNP Construction Complete	22-Mar-17	28-Nov-17 10-Dec-20		PM500 PM505, NH3815, BOP245, PC8525, HT3810, HP3800, PE190, PE195, PE200, PM510, PM525, PM530, PM535, PM540, PM545, PE205	PM520 LR345, PE210, PE215, PE220, PM140, PM550, PE225, PE230, LR350	0.0d											Training		4	NGNP C)onstr
	C.Q.10.10.10.05	.01 Project Cost & Schedule	22-Mar-17	01-Sep-20	900.0d			72.0d														C.Q.10.10.1	10.05
	PM525	Integrated Schedule		01-Sep-20		PM500	PM520	72.0d					Ш	L								Integrated S	
	PM530	Cost & Schedule Support	22-Mar-17	01-Sep-20		PM500	PM520	72.0d										-				Cost & Sche	
		.02 Quality Assurance		01-Sep-20	900.0d		PM530	72.0d			11											C.Q.10.10.1	10.05
	PM535	Update QAPP	22-Mar-17	25-Jul-17		PM500	PM520	882.0d			11								Upcate CAR Quality Leve	-P-			
	PM540	Quality Level Determinations	22-Mar-17	25-Jul-17		PM500	PM520	882.0d			11		11						quality Lew	e Determina	nons		
	PM545 C.Q.10.10.10.05 St	Quality Support/Surveillances	22-Mar-17	01-Sep-20	900.0d 160.0d	PM500	PM520	72.0d	·		-++	-+	₩	↓↓			·					Quality Sup	
			11-Dec-20	22-Jul-21			PAULTE PAULEE				11												
	PM550	Initiate Start-up	11-Dec-20		0.04	PM520, PM140	PM575, PM555, PM560, PM565, PM570, PM585, PM590, PM592, PM595, PM597, PM800	20.0d														►∳ initiate 3	лап-и
	PM555	Records Disposition	11-Dec-20	24-Jun-21	140.0d	PM550	PM580	40.0d			11										- I	Re Re	ecords
	PM560	Readiness Assessment	11-Dec-20	24-Jun-21	140.0d	PM550	PM580	40.0d														Re	eadine
-	naining Level of Effo				-			Page 6 of 5	• •				 Г А (sk filfor -	All Activit	lac							
		ort Actual Work		emaining Wo	- 1			Eage 6 of 53					TA9	os titer: A	ali activit	185							

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	TEGRA	TED PLANNING	SCH	DOL	-													9-29							
		Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	202	0 202	21	1
	PM565	Operational Readiness Review	11-Dec-20	24-Jun-21	140.0d	PMCCD	PM580	40.0d		_		,	1		<u> </u>			<u> </u>						Opera	
		Final Project Closeout Report	11-Dec-20	24-Jun-21		PM550	PM580	40.00				<u>+</u>	-+	₩				·ł							
	PM575	Training	11-Dec-20	24-Jun-21		PM550	PM580	40.00											1 1					Trainir	
	PM58D	Start-up Complete	1100010	22-Jul-21	0.0d	PM575, PM555, PM560, PM565, PM570, PM800, PM585, PM590, PM592, PM595, PM597	PM810	20.04															1	Start	
	0.0.40.40.40.00	01 Project Cost & Schedule	11-Dec-20	24 1	140.0d			40.0d											1 1					C.Q.10	
																			1 1						
	PM585	Integrated Schedule	11-Dec-20		140.0d		PM580	40.0d				į	-+	<u> ii</u>	-il-		·	···						Integra	
	PM590	Cost & Schedule Support	11-Dec-20			PM550	PM580	40.0d							1				1 1					Cost &	
	C.Q.10.10.10.06.		11-Dec-20		140.0d			40.0d											1 1						
	PM592	Final Cyber Security Plan	11-Dec-20			PM550	PM580	40.0d											1 1					Final C	
		Final Facility/Project Security Plan	11-Dec-20			PM550	PM580	40.0d			į	!			1									Final F	
		Final Security Vulnerability Assessment	11-Dec-20		140.0d		PM580	40.0d	l		ļ	ļ		<u>ЦЩ</u>	_il.		·							Final S	3
- 0		erations PM Support	03-8ep-21	15-Apr-25	943.0d			0.0d																	1
	PM600	initiate Operations	03-8ep-21		0.0d	PM810	PM605, PM625, PM610, PM615, PM620, PM640, PM645, PM650, PE235	193.0d																🗣 initia	10
	PM605	Operations Management	03-8ep-21	18-Jul-24	750.0d	PM600	PM640	193.0d			1	i			1		i		1 1				+		_
	PM610	Spent Fuel Management Plan	03-8ep-21	18-Jul-24	750.0d	PM600	PM640	193.0d							1				1 1				-	-	=
	PM615	Waste Management	03-8ep-21	18-Jul-24	750.0d	PM600	PM640	193.0d											1 1				-	-	
	PM620	Long-Term Monitoring	03-8ep-21	18-Jul-24	750.0d	PM600	PM640	193.0d				t	-+	10	-!t-									-	-
	PM625	Training	03-Sep-21	18-Jul-24	750.0d	PM600	PM640	193.0d											1 1				-	-	_
	PM640	NGNP Hot Operations Complete		15-Apr-25		BOP900, HP3900, HT3900, NH8900, PC3900, PE900, PM900, PM600, PM605, PM625, PM610, PM615, PM620, PM645, PM650, PE235	BOP1000, HP81000, HT81000, NH81000, PC81000, PE1000, PM1000	0.04																	
	C.Q.10.10.10.07.	01 Project Cost & Schedule	03-8ep-21	09-May-24	700.0d			243.0d											1 1				1		_
	PM645	Integrated Schedule	03-Sep-21	09-May-24	700.0d	PM600	PM640	243.0d											1 1					-	_
	PM650	Cost & Schedule Support	03-Sep-21	09-May-24	700.0d	PM600	PM640	243.0d				<u>+</u>	-+	₩				·ł							-
0.0	2.10.10.12 Program		01-Oct-07	21-Dec-23	4207.0d			343.0d															┥┥┥┝╸		-
	-	nceptual Design PE Support	01-Oct-07	25-May-11	926.0d			3624.0d						10 10 12	01 Conce	tual Desk	IN PE SUN	oot	1 1						
		01 Project Engineering	01-May-08	-	773.0d			69.0d							01.01 Pro				1 1						
		PE Support to Design	01-May-08		800.0d		PM220	69.0d					i ele	upport to											
	PE105	Organize & Charter BEA NGNP Design Code Committee	01-May-08			PM145	PM220	689.Dd	┈┝╾		Organize	& Charter				in littee							1		•
	PE110	Code of Record Study/Final Decision Analysis	01-May-08	07-Jan-09	180.0d	PM145	PM220	689.Dd	-	┍━╹	Code of I	ecord Stu	dy/Final	ecision A	natysis										
	PE115	Design Control Plan/Engineering Procedu	01-May-08	08-Aug-08	72.0d	8E350	PE120	797.0d		🗖 Des	ign Contra	Plan/Eng	ineering	riscedure	s										
	PE120	Conceptual Design Work Plan	01-May-08	08-Aug-08	72.0d	PE115	PE125	797.0d				sign Work													
	PE125	Conceptual Design Schedule	01-May-08	08-Aug-08	72.0d	PE120	PM220	797.0d	=	Con	ceptual D	sign Sche	dule		1 I		i								
	PE130	Code of Record Study	02-Oct-08	04-Feb-09	90.0d	PM150	PM220	669.0d	[[-	Code of	ecord St	dy	111	1								1		-
	PE135	Licensing Technical Support	02-Oct-08	04-Feb-09	90.0d	PM150	PM220	669.0d				Technica													
	C.Q.10.10.12.01.	02 Systems Engineering	01-Oct-07	30-Sep-09	496.0d			4054.0d		+	- c	a .10.10.1	2.01.02	ystems E	ingineering										
	C.Q.10.10.12.0	11.02.01 Syst. Engineer & Proj Definition	01-Oct-07	30-Sep-09	496.0d			4054.0d			- 0	a.10.10.1	2.01.02.0	Syst. E	ngineer & P		on Suppo								
	C.Q.10.10.1	2.01.02.01.01 Requirements Developme	01-Oct-08	22-Jun-09	174.0d			571.0d		-	C.Q.	0.10.12.0	1.02.01.		ments De	eopment	Support T	asks							
	3E100	Identify Requirements Documents	01-Oct-08*	14-Oct-08	10.0d		8E105	571.0d		Q lde	entity Red	oirements			- <u> </u> -								1		
								Page 7 of 55						<u></u> 	SK filter:	All Activit	lac						<u> </u>		-
Remai	ining Level of Effo	rt Actual Work	Critical R	emaining Wo	rk			, age roro	-					- 10	and a subscription.										

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2010	ATED PLANNING	CONL		-													9-2						
	Activity Name	Start	Finish	Planned Predecessors Duration	Successors	Total Float	2	2008	2009	2010	2011	201	2 2	013	2014	2015	5 20	16	2017	2018	2019	2020	-
3E105	Finalize DOORS Requirements Architect	15-Oct-08	28-Oct-08	10.0d SE100	SE110, SE115	571.0d	H	19	Finalize D	ORS Req	uirement	Archite	cture			: I			—				
3E110	Derive Integrated Requirements	29-Oct-08	03-Mar-09	90.0d 8E105	8E135	650.0d			Derive	integrated	Requires	entis											1
8E115	Populate Database	29-Oct-08	03-Mar-09	90.0d 8E105	8E120, 8E135	571.0d		╟╍═	Popula	is Databas	æ												L
3E120	Draft Requirements Report	10-Dec-08	14-Apr-09	90.0d 3E115	SE125, SE122	571.0d			Draft	Requireme													
8E122	Assumptions Tracking System	10-Dec-08	14-Apr-09	90.0d 8E120	8E135	620.0d		╵╵╺╴	Assur	notions Tra	scking Sy	tein				i							
3E125	Review Requirements Management Report	15-Apr-09	26-May-09	30.0d 8E120	8E130	571.0d		1 '	Revi	ev Require Requiren	ements M	enzgem	ent Rep	ort									L
3E130	Issue Requirements Management Report	27-May-09	09-Jun-09	10.0d 8E125	8E135	571.0d			Issu	Requiren	nents Ma	ageme	nt Repor	rt									L
8E135	Requirements Management Report Complete		22-Jun-09	0.0d 8E130, 8E110, 8E115, 8E122	PM220	571.0d			Rec	arements	Manager	est Rej	ort Con	npiete									L
C.Q.10.10	12.01.02.01.02 Risk Register and Risk Ma	01-Oct-08	30-Sep-09	246.0d		499.0d		1 	•	10.10.10.1	12,01.02	1.42 R	isk Regi	ster an	Risk N	anagem	nt Suppo	r: Tasks					L
3E150	Identify Risk Documents	01-Oct-08*	28-Oct-08	20.0d	8E155	499.0d	t1	191	dentify Ris	k Docume	nts	111				I							ſ
3E155	Finalize Risk Register Architecture	29-Oct-08	09-Dec-08	30.0d 8E150	3E160	499.0d				lisk Regist		dure											L
3E160	Populate Risk Register	10-Dec-08	14-Apr-09	90.0d SE155	SE165, SE170	499.0d		15	Popul	e Risk Re	egister												L
3E165	Finalize Risk Procedure	10-Dec-08	06-Jan-09	20.0d 8E160	3E200	690.0d		14	Finalize	Risk Proce	dure					i							L
3E170	Compare Other Risk Methods	21-Jan-09	14-Apr-09	60.0d 3E160	8E175	499.0d		L=1	Comp	ere Other I	Risk Met	49											J
3E175	Conduct Risk Workshops	15-Apr-09	07-Jul-09	60.0d SE170	SE180, SE185	499.0d	1.1			educt Risk	Worksho												ſ
3E180	Develop Risk Response	15-Apr-09	18-Aug-09	90.0d 8E175	3E200	530.0d			-	velop Risk oft Risk Ma	t Respon												I
3E185	Draft Risk Management Plan	08-Jul-09	18-Aug-09	30.0d SE175	3E190	499.0d			- H 🛛 🖻														I
8E190	Review Risk Management Plan	19-Aug-09	16-Sep-09	21.0d SE185	8E195	499.0d			u ⊨ g ⊧	eview Risk			an i										I
8E195	Issue Risk Management Plan	17-Sep-09	30-Sep-09	10.0d 8E190	3E200	499.0d		L	<u></u>	ssue Risk I	Managem	nt Plar				I							l
8E200	Risk Management Plan Complete		30-Sep-09	0.0d 8E195, 8E165, 8E180	PM220	499.0d			Las I	isk Manag	ement P	n Com	plete										
C.Q.10.10	12.01.02.01.03 TRL Development and Val	01-Oct-08	11-Aug-09	210.0d		4090.0d		1 	C.	6.10.10.12	2.01.02.0	DS TR	L Devek	prient	and Va	dation 3	apport Ta	sks					I
8E205	Finalize TRL Process	01-Oct-08*	03-Oct-08	3.0d	8E210, 8E215	567.0d		ء ہے ا	inalize TR	Process													I
3E210	Update TRL Calculator	05-Oct-08	21-Nov-08	35.0d 8E205	8E230	4247.0d		-	Update Ti	tt. Calculat	tor												I
8E215	Convene Validation Board	05-Oct-08	17-Oct-08	10.0d 8E205	8E220	567.0d				alidation B													I
3E220	Validate TRL Baseline	20-Oct-08	31-Oct-08	10.0d 8E215	8E225, 8E240	567.0d		- -	Validate T	RL Baselin	e	111-											ľ
3E225	Issue Validated TRL Baseline		31-Oct-08	0.0d 8E220	8E230	4090.0d		- F	ssue Valk	sted TRL 8	Baseline		1			i							I
8E230	Update TRL Baseline (Rev 1)	01-Jul-09	11-Aug-09	30.0d 8E225, 8E210	3E275	4090.0d			ւ-ց տ	date TRL I	Baseline	Rev 1)											I
C.Q.10.10	12.01.02.01.04 Technology Development	20-Oct-08	09-Jan-09	47.0d		567.0d			C.Q.10.	date TRL 0.12.01.02	2.01.04 т	chnolo	gy Deve	lopmer	t Road	Maps Su	port Task	15					I
8E240	Finalize Vendor TDRMs	20-Oct-08	31-Oct-08	10.0d SE220	8E245, 8E250, 8E265	567.0d		₽	inalize V	ndor TDRI	Ms												l
8E245	Consolidate Decision Discriminators	03-Nov-08	28-Nov-08	20.0d 8E240	8E255	577.0d	[]]]	9	Consolida	de Decision	n Discrim	nesors											ľ
8E250	Formulate Technology Alternatives	03-Nov-08	12-Dec-08	30.0d 8E240	8E255	567.0d				Technolo	-	eres -											l
8E255	Finalize TDRMs for Project	15-Dec-08	09-Jan-09	20.0d 8E250, 8E245	3E260	567.0d				TDRMs for													I
3E260	Issue NGNP Tech Dev Road maps		09-Jan-09	0.0d 8E255, 8E275, 8E270	SE280, PM220	567.0d		F	Issue No	NP Tech I	Dev Ross	maps											l
8E265	R&D Workshops on TDRMs	03-Nov-08	12-Dec-08	30.0d 8E240	8E270	567.0d		1		kshops on		Щ				i							L
SE270	Vendor Workshops on TDRMs	15-Dec-08	09-Jan-09	20.0d 8E265	8E260	567.0d				Norkshops		ŧij.				i – T							ſ
	Update TDRMs (Rev 1)	20-Oct-08	09-Jan-09	60.0d 8E230	3E260	567.0d				PRMs (Re													I
	12.01.02.01.05 Design Data Needs (DDN	12-Jan-09	26-Jun-09	120.0d		567.0d			-	10.10.12.	01.02.01.	li Desi	gn Data	Needs	(DDNs)	Support	Tasks						I
3E280	Update DDNs	12-Jan-09	03-Apr-09	60.0d 8E260	8E285	567.0d			Updat		_												1
	DDN Database	06-Apr-09	26-Jun-09	60.0d 8E280	PM220	567.0d			-0 00	WDatabase	•	Щ.,											l
		01-Oct-07	22-May-08	169.0d		346.0d				1 02.01.07		gineeri	ng Studi	es									ſ
8E290	Phase Studies Work Scope & Award	01-Oct-07	30-Nov-07	45.0d	8E295, 8E300, 8E305, 8E310, 8E315	153.0d	Ph	nase Stu	dies Work	Scope & A	ward .												I
8E295		03-Dec-07	08-Feb-08	50.0d 8E290	NHS095					ly System													L
8E300	IHX & Secondary Heat Transport Loop Alternatives	03-Dec-07	08-Feb-08	50.0d 8E290	NH8315	447.0d	^ ¶!	IHX & S	econdary	Heat Trans	port Loop	Aterna	tives										I
8E305	RPV & IHX Pressure Vessel Alternatives	03-Dec-07	08-Feb-08	50.0d 8E290	NH8095	447.0d	- The second sec			re Vessel)						L							L
8E310	Contamination Control Study	03-Dec-07	08-Feb-08	50.0d 8E290	8E320	153.0d				froi Study													ſ
8E315	Core Design Study & Design Workplan	03-Dec-07	02-May-08	110.0d 8E290	NH8125	387.0d		Care	Design St	dy & Desig	an Workp	eri 👘				1							1
evel of Eff	ort Actual Work	Critical Br	emaining Wo	urk.		Page 8 of 5	5						TASK 1	liter: Al	I Activi	ties							

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	Activity Name	Start	Finish	Planned	Predecessors	Successors	Total Float	200	8 20	09 201	10	2011	2012	2013	201	4 201	5 201	6 7	017	2018	2019	2020	202
	rearry name	July 1	2 mail	Duration	- resectosors	Coccessors	rotal Picat	200	20			2011	2012	2013	201	201	- 201	2	~	2018	2019	2020	20.
8E320	Reactor Contamination & Building Functi	11-Feb-08	22-May-08	74.0d	SE310	PM150	153.0d	पंचा	Reactor C	ontaminatio	on & Bul	lding ik	rictions	T		1							
		01-May-08	-	773.0d			69.0d	I ∣ • †				- C.C.		i I	chuicaí D	Iscipline S	apport (Co	nceptual	0				
8E325	Structural/Seismic	01-May-08	25-May-11		PM145	PM220	69.0d					Sår	tural/Sels										
8E33D	Plping/Mechanical Systems	01-May-08	25-May-11		PM145	PM220	69.0d					Pip	deviechan	ical Syst	ems			1					T T
8E335	HVAC	01-May-08	25-May-11	800.0d	PM145	PM220	69.0d	I ┝╾╡			_	HM	di	!		1							
8E340		01-May-08	25-May-11		PM145	PM220	69.0d	I ┝╍╡				Elec	nçal										1 1
8E345		01-May-08			PM145	PM220	69.Dd	I ┣┛╡			[I&C											1 1
8E350	ASME RPV Code Case Prep.	01-May-08	25-May-11	800.0d	PM145	PE115, PM220	69.0d	∣ ⊢ Ц				ABA	ERPV Co										
8E355	ASME High Temp Metals (617, 800H) Code Case Prep.	01-May-08	25-May-11	800.0d	PM145	PM220	69.0d					ASS				BEH) Cod	Case Pre	9 .					
3E360	ASME Graphite Baseline (Beginning-of-Life) Code Case Prep.	01-May-08	02-Sep-08		PM145	PM220	780.0d	┝ ╸ ╡	ASME	Graphile B	aseline ((Beginal	ng-of-Life)	Code Ga	sse Prep								
8E365	ASME B&PV Code Consultation	01-May-08	-		PM145	PM220	69.0d	╵┶╡			-	AB	E B&PV C	pde Con	sutation	1							(II
	Preliminary Design PE Support	06-Jul-11	25-Apr-14	733.0d			19.0d						li	 			2.02 Prel			E Supp	ort		(II
C.Q.10.10.12.0	2.01 Project Engineering	06-Jul-11	22-Oct-13	600.0d			140.0d	. l							6.0.1	.10.12.02	1 Project	Enginee	ering				I
PE140	EPC Work Plan	06-Jul-11	08-Nov-11		PM270	PM310	650.0d	Ī					EPC World			1							
PE145	Update Requirements Management Plan	06-Jul-11	08-Nov-11		PM270	PM310	650.0d						-++	·		gement P	an						(II
PE150	Preliminary Design Schedule	06-Jul-11	08-Nov-11		PM270	PM310	650.0d			11		1	Preliminar	y Design									
PE155		D5-Jul-11	22-Oct-13		PM270	PM310	140.0d				- F	-			FE Er	ineering S	upport to I	esign					(II
PE160		D5-Jul-11	13-Mar-12		PM270	PM310	560.0d	I			k		BEAN	SINP D	sign Cod	e Commiti	ee.	ļ					
	2.02 Systems Engineering	06-Jul-11	04-Nov-13	608.0d			144.0d			11		L	ii	i	C.Q.1	3.10.12.02	02 System						
			08-Nov-11	90.0d			650.0d					1	CiQ.10.10				Developm	ent Supp	por: Tas	ts.			
8E370	Requirements Development Update	06-Jul-11	08-Nov-11		PM270	PM310	650.0d				ŀ			nts Dev									
		06-Jul-11	08-Nov-11	90.0d			650.0d			11		1.22	-++	44-			and Risk N	lanagem	ient Sup	port Ta:	sks		
8E375	Risk Management Plan Update	D6-Jul-11	08-Nov-11		PM270	PM310	650.0d	I					Risk Mana		Plan Up			ļ					
		06-Jul-11	08-Nov-11	90.0d			650.0d			11				i		hnology D	evelopmen	r Road N	/apping				
3E38D	TRL Baseline Update	06-Jul-11	08-Nov-11		PM270	PM310	650.0d			11			TRL Base			1							
		05-Jul-11	08-Nov-11	90.0d			650.0d			11			6,0,10,10	44-	2.04 Des	Iph Data N	eeds (DDI	s) Bupp	or Tas	ks			(II
3E385		D5-Jul-11	08-Nov-11		PM270	PM310	650.0d			11	- F		Update Di DDN Data			1							
8E390	DDN Database	06-Jul-11	08-Nov-11		PM270	PM310	650.0d	 										·					
			04-Jul-12	261.0d			479.0d										ction and	Fab Sup	port Bid	g Prelim	Design		
8E395	Welding Facility Prelim Design	06-Jul-11	04-Jul-12		PM270	PM310	479.0d				ŀ		We	ding Fac	ally Prel	mDesign							
3E400	Fabrication Facility Prelim Design	06-Jul-11	04-Jul-12		PM270	PM310	479.0d			11	ľ	-	Fa	incation		relim Desi		L					
C.Q.10.10.1 8E405	2.02.02.05 Heat Transport Development Revise/Update Test Plan for Engr. Scale (CTF)	09-Sep-13 09-Sep-13	04-Nov-13 04-Nov-13	40.0d 40.0d	HT8727	HT3760	144.0d 144.0d							∣ ₁			02.06 Hea est Plan fo				nt		
0.0.10.10.10.0	1	OS- hd dd	35.444.44	733.04				 					<u> </u>	<u></u>		10.45.45.4	0.00.00.0		Discourse		and (Section	and a	
8E410	2.03 Technical Discipline Support (Prelimin Structural/Seismic	05-Jul-11 05-Jul-11	25-Apr-14 14-Jan-14	733.0d	PM270	PM310	7.0d 80.0d			11	L		11			teral/Sels		ecimical	Uncipli	e anto	ort (Prelim		
36410		06-JUP11 06-JUP11	14-Jan-14		PM270 PM270	PM310 PM310	80.0d				[inic Ical System						
36415	HVAC	D6-JuH11	14-Jan-14		PM270	PM310	80.0d				[!!		HV		car oyater	T					
86425	Electrical	06-Jul-11	14-Jan-14		PM270	PM310	80.0d			11					Elec	~							
86430	IAC	06-JuH11	14-Jan-14		PM270 PM270	PM310 PM310	80.00	 					#		IAC			+					
36435		06-Jul-11	22-May-12		PM270	NH8730	100.0d			11	[424	AF REV	_	e Review/	Approval						
3E440	ASME High Temp Metals (617, 800H) Code Case Prep.	06-Jul-11	19-Jun-12		PM270	MAT0335	90.0d				ŀ		-				800H) Cod	e Case I	Prep.				
3E445		01-Oct-12	11-Apr-14	400.0d	MAT0335	PM310	17.0d						-■		╞	SINE High	Temp Met	als (617,	800h) C	ode Ca	se Review/	Approval	
3E450	ASME Graphite Baseline (Beginning-of-Life) Code Case	06-Jul-11	22-May-12	230.0d	PM270	NH8730	100.0d				ł	╍╡	ASN.	E Glaph	ite Base	ine (Begin	ning-of-Life	Code (Case Re	view Ap	proval		
3E455	ASME Graphite Irridiation/Creep (Remainder-of-Life) Code Case Prep.	25-Jun-12	25-Apr-14	480.0d	MAT1160, MAT1185,	PM310	7.0d						-			SME Grap	nite imidiat	ion/Cree	p (Rem	ainder-o	rf-Life) Cod	e Case F	rep.
3E460	ASME B&PV Code Consultation	06-Jul-11	14-Jan-14	660.0d	PM270	PM310	80.0d				-	•			ASI	IE BAPV (ode Cansi	litation					
ining Level of Ef	fort Actual Work		emaining We				Page 9 of 5	5					TA	PM Silion	All Acti	dtion							

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	Activity Name	Start	Elalah	Planned	Predecessors	0	Total Float	2008	2009	2010	2011	2042	20/2	2244	2045	2044	2041	7	40 -	040	2020	2021
	Activity Name	atent	Finish	Duration	Fredecessors	Successors	Total Float	2006	2009	2010	2011	2012	2013	2014	2015	2016	2017	/ 20	018 2	1019		30/21
C.Q.10.10.12.03	Final Design PE Support	28-Apr-14	20-Feb-17	735.0d			24.0d						<u>†</u> TT	1	-		C.0	.10.10.1	203 Fine	al Design R	PE Support	T
C.Q.10.10.12	.03.01 Project Engineering	28-Apr-14	30-Dec-16	700.0d			59.0d			11			1 1 1	1+	++		- C.Q.	10.10.12	.03.01 Pr	oject Engl	neering	
PE165	Update EPC Work Plan	28-Apr-14	29-Aug-14	90.0d	PM310	PM440	669.Dd			11			1 1 1		Update El	C Work	lan					
PE170	Final Design Schedule	28-Apr-14	29-Aug-14	90.0d	PM310	PM440	669.Dd			Ϊ <u>Ϊ</u>	-+j-	+++	-iit		Final Desi	gn Sched	ule					t
PE175	Update Final Documented Safety Analysis (FSAR)	09-Feb-15	29-Jun-15	100.0d	FL80545, PM310	PM440	454.0d								-	pdate Fin	al Docume	intec Sat	ety Analy	sis (FSAR	3	
PE180	PE Engineering Support to Design	28-Apr-14	30-Dec-16	700.0d	PM310	PM440	59.0d						1 1 1				PEE	ngineerir	ng Suppor	rt to Desig	n	
PE185	BEA NGNP Design Code Committee	28-Apr-14	02-Jan-15	180.0d	PM310	PM440	579.0d								BEAN	GNP Des	ign Code i	Committe				
C.Q.10.10.12	03.02 Systems Engineering	28-Apr-14	20-Feb-17	735.0d			24.0d			11					÷					Bystems E	noineering	
	12.03.02.01 Requirements Development Sup	28-Apr-14	29-Aug-14	90.0d			669.0d			*****	-+	+++	-!!-!	-	C.Q.10.10	12.03.00				nent Supp		t
3E465	Requirements Development Update	28-Apr-14	29-Aug-14	90.0d	PM400	PM440	669.0d			11			1 1 1		Requirem	ents Deve	looment U	odate				
C.Q.10.10.	12.03.02.02 Risk Register and Risk Manage	28-Apr-14	29-Aug-14	90.0d			669.0d			11									and Risk F	Manageme	ent Support	i n
3E470	Risk Management Plan Update	28-Apr-14	29-Aug-14		PM400	PM440	669.0d			11			1 1 1		Risk Mare							
C.Q.10.10	12.03.02.03 Technology Road Mapping	28-Apr-14	23-Jan-15	195.0d			564.0d			11			1 1		· ·	-			Road M	apping		
3E475	TRL Baseline Update	28-Apr-14	23-Jan-15	195.0d	PM400	PM440	564.0d	 		<u> </u>	-+	+++			TRL				1			t
	12.03.02.04 Design Data Needs (DDNs) Sup	28-Apr-14	10-Oct-14	120.0d			639.0d			11								on Dete I	Needs (D)	DNs) Surv	oort Tasks	
3E490	Update DDNs	28-Apr-14	18-Jul-14		PM400	3E485	639.0d							-	Undate D	Ne						
36485	DDN Database	21-Jul-14	10-Oct-14		3E480	PM440	639.0d			11					DDN Dat	abase			1			
	12.03.02.05 Heat Transport Development	31-Oct-16	20-Feb-17	80.00		- 10.446	24.0d			11								10.10.4	2 03 02 0	5 Heat Tr	ansport De	L
8E490	Validate TRL 7	31-Oct-16	28-Nov-16		HTSBOD	8E495, PM405	24.00	 		₩	-++	╋╋╍╋╍╸		· -	·•·	····-		te TRL 7				F
86495	Revise/Update Test Plan for NGNP Testing		20-Feb-17		8E490	PM440	24.00									l i				line for MG	INP Testing	
	.03.03 Technical Discipline Support (Final)	28-Apr-14	30-Dec-16	700.0d	05430	FINANU	59.0d			!!			! ! !								iscipline Su	1.
3E500	Structural/Seismic	28-Apr-14	30-Dec-16	700.0d	PM400	PM440	59.0d			11								tural/Set		connear b	suprice of	T
36505	Piping/Mechanical Systems	28-Apr-14	30-Dec-16	700.0d		PM440	59.0d			11			1 1 1		i				nical Syst			l
8E510	HVAC	28-Apr-14 28-Apr-14	30-Dec-16 30-Dec-16	700.0d		PM440 PM440	59.0d			₩	-+	+++	-iii				HVA		ncal syst	iems		ł
3E515	Electrical	28-Apr-14	30-Dec-16	700.0d		PM440	59.0d			11			1 1 1				Elect					1
																	-	ncai				1
8E520	I&C	28-Apr-14	30-Dec-16	700.0d		PM440 PM440	59.0d			11			1 1 1				I&C		_			L
3E525	ASME Support Through CTF Operation and Final Design to Support Licensing Activities		30-Dec-16	700.0d													T		-		eration and	
8E530	ASME Graphite Irradiation/Creep (Remainder-of-Life) Code Case Review/Approval	28-Apr-14	30-Dec-16		MAT1235, MAT1285, PM400, MAT1120, MAT1385	PM440	59.0d										-ASM	E Graphi	be irradiat	lion/Creep	(Remaind)	Î
8E535	ASME B&PV Code Consultation	28-Apr-14	30-Dec-16	700.0d	PM400	PM440	59.Dd			TT		*****			· · · · · · ·		ASM	E B8 PV	Code Con	suitation		t
C.Q.10.10.12.04	Construction PE Support	22-Mar-17	25-Feb-20	765.0d			207.0d						1 1 1		i						C.Q.10.10	1
PE190	Operating Procedures, Manuals & Documentation	22-Mar-17	25-Feb-20	765.0d	PM500	PM520	207.0d												+		Operating	ł
PE195	Engineering Support to Construction	22-Mar-17	25-Feb-20	765.0d	PM500	PM520	207.0d			11			1		i		-				Engineerin	ł
PE200	Vendor Data Review	22-Mar-17	25-Feb-20	765.0d	PM500	PM520	207.0d			11			_il		i		-				Vendor Da	ŧ
PE205	Verification & Validation Support	22-Mar-17	25-Feb-20	765.0d	PM500	PM520	207.0d					IIT T			T		-				Verification	f
C.Q.10.10.12.05	Start-Up PE Support	11-Dec-20	24-Jun-21	140.0d			40.0d			11					; II				1			ł
PE210	Operator Training	11-Dec-20	24-Jun-21	140.0d	PM520	PM810	40.0d			11			1									1
PE215	Operating Procedures, Manuals & Documentation	11-Dec-20	24-Jun-21	140.0d		PM810	40.0d															f
PE220	As-Built Drawings	11-Dec-20	24-Jun-21	140.0d	PM520	PM810	40.0d			11												4
PE225	Verification & Validation support	11-Dec-20	24-Jun-21	140.0d	PM520	PM810	40.0d			11	1	111-1	-!!-!		·····							đ
PE230	Maintenance /Logistics Engineering	11-Dec-20	24-Jun-21	140.0d	PM520	PM810	40.0d															f
C.Q.10.10.12.05	Operations Engineering	03-8ep-21	21-Dec-23	600.0d			343.0d						1 1									ſ
PE235	Maintenance/Logistics Engineering	03-Sep-21	21-Dec-23	600.0d	PM600	PM640	343.0d			!!			1 1		!				1			ŀ
Q.10.10.13 Proc	urement Planning & Overhead	06-Jul-11	22-Oct-13	600.0d			140.0d			11		╈╋	; 	r G.Q.10.	10.13 Proc	urement F	lanning &	Overhea	1			
PR100	Acquisiton Strategy	06-Jul-11	22-Oct-13	600.0d	PM270	PM310	140.0d			11			_ <u>i</u> i	Acquisit	on Strategy							t
PR110	Procurement Support	06-Jul-11	22-Oct-13	600.0d	PM270	PM310	140.0d			11				Frocure	ment Suppo	art						
10.15 Licensin	g & Regulatory	07-Jul-08	05-Jan-24	4023.0d			332.0d	∣ +				┿╋╾┥╾╸	+ + +	╺╋╾┿	÷				+		_ _	ł
																						_
aining Level of E	Effort Actual Work	Critical Re	emaining Wo	ark			Page 10 of 5	5				Π.	ASK filter:	All Activ	ttes							

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1		ATED PLANNING																		8				
		Activity Name	Start	Finish	Planned Predecessors Duration	Successors	Total Float	2008	3 2009	2010	2011	2012	2	013	2014	2015	20	16	2017	2018	2019	202	0 20	21
c	Q.10.15.01 Lioens	l Ing Project Management	07-Jul-08	15-Jul-09	246.0d		649.0d		c	0.15.01	Licensin	Ripiect	Manao	ement		· · · ·		┍╼╋┑					<u>, to a</u>	_
-	LR:100	Issue WEC Licensing Spec. Task	07-Jul-08*		0.0d	LR110, LR115,	0.0d		Issue WEC L														1 1	
						LR125, LR145, LR142		T															1 1	
										11	1													
	LR:105	Congressional Licensing Strategy Report Published	15-Aug-08*	21-Aug-08	5.0d	LR110	649.0d	리	Congressio	ne Licensin	strateg	Report	Publish	ed		1								
	LR110									11													1 1	
	LR110	Early Pre-application Planning & Discussi Licensing Specification Development	22-Aug-08	15-Jul-09	234.0d LR100, LR105 214.0d LR100	LR130 LR120	649.0d	T		ally Pre-appi nsing Specif	ication -	anning a	Discus	sions									1 1	
_	LR120	Licensing Specification Development	07-Jul-08 01-May-09	30-Apr-09 30-Jun-09	43.0d LR105	LR145, LR257	0.06			ersing specir tersing Plan	Develop	evelop ne	ant										1 1	
	LR125	PSID Content Development	07-Jul-08	03-Apr-09	195.0d LR100	LR250	300.0d	┝╍┝	Paid			III.											1 1	
0	Q.10.15.02 Early 8		07-Jul-08	05-Apr-16	2000.04	CREDU	282.0d			- Donnacint De	reropine		_					0.10.1	5 D2 E	a ty Site	Permit (ES	P)	· 	
ĩ		SP/LWA Pre-Application Program	16-Jul-09	18-Jul-11	523.0d		649.0d	11				0 .10.15.	02:01	ESPILI	A Pre-	Applicatio	Progra	0	2.64 E	aig aire	r en nie (ee		1 1	
E	LR130	Policy issues	16-Jul-09	15-Jul-10	261.0d LR110	LR135	649.0d			Pol	icy issue												1 1	
F	LR135	Policy & Technical Issues	16-Jul-10	18-Jul-11	262.0d LR130	LR165	649.0d			i 🖬			chnica	Issue									1 1	
5		SP/LWA Application Preparation	07-Jul-08	12-Dec-12	1136.0d		543.0d	_ ↓			- L-H		C.(02.02	ESP/LWA	Applicat	on Pres	paration					
Г	LR:140	Plant Envelope and Site Selection		14-Apr-10	0.0d BOP035, PM230	LR150, LR145	282.0d	·{F-		to Plant i	Envelope	and Site	Select	pn									· 	
F	LR142	Preliminary ESP Planning	07-Jul-08	30-Jun-09	257.0d LR100	LR145	488.0d	╘━┢═	Pr	elininary ES	PPlanhi													
F	LR:145	Detailed ESP Planning	15-Apr-10	10-Dec-10	172.0d LR100, LR140,	LR150, LR155,	282.0d	Γ			Detailed	EEP PIA	nning											
					LR120, LR142	LR160				117														
	LR:150	ESP Application Preparation	13-Dec-10	12-Dec-12	523.0d LR145, LR140	LR165	282.0d			. ⊢ ∎			. E8	P Appl	cation P	reparation							1 1	
	LR:155	LWA Analysis	13-Dec-10	09-Dec-11	260.0d LR145	LR160	806.0d					LIWA A	nalysis							_				
L	LR:160	LWA Application Preparation	13-Dec-10		262.0d LR155, LR145	LR170	804.0d			'=-0		WA A	oplicat	on Pre	paration	4							1 1	
		SP/LWA NRC Review	13-Dec-11	05-Apr-16	1125.0d		282.0d			i									5.02.03	ESPILI	NA NRC R	eview	1 1	
		.01 Submit & Docket	13-Dec-11	12-Feb-13	305.0d		499.0d			i l						.01 Sub	nt & Doc	ket					1 1	
	LR165	ESP Application Submitted		12-Dec-12	0.0d LR150, LR135	LR175	282.0d						ES	P Appl on Sut	cation S	submitted							1 1	
	LR170	LWA Application Submitted		13-Dec-11	0.0d LR160	LR210	804.0d				<u>h</u>		oplicat	on Sut	mitted	<u> </u>				_				
	LR175	Acceptance Review	13-Dec-12	12-Feb-13	44.0d LR165	LR180, LR205, LR225	282.0d					"	1	ccepta	ice Rev	dew .							1 1	
	0.0.10.15.02.02	0.02 Environmental Review & Permits	13-Feb-13	07-Jan-15	496.0d	CREED	606.0d			11							0.45.02/	2.00.0	ieu linnen		view & Pe	mile	1 1	
	LR180	Scoping Process	13-Feb-13	15-May-13	66.0d LR175	LR185	326.0d			!				8000	ng Piloc		0.15.02.	13.UE 8	awaphh	nensai Po	wew a re	mits	1 1	
	LR185	Staff Review	13-Feb-13	11-Mar-14	280.0d LR180	LR190	326.0d			!				0.00	2.00	Review							1 1	
	LR190	Receipt and Resolution of Public Comme	12-Mar-14	07-Jan-15	216.0d LR185	LR195, LR200	326.0d			!			11-	L L		Rece	ot and R	esolutio	n of Pul	blic Com	ments		1 1	
	LR195	State and Local Permits		07-Jan-15	490.0d LR190	LR250	606.0d	·		+	-+	╟╫╌┼╌	+!==			State	and Loca	l Perm	ts				·//	
	LR200	Final EIS Issued		07-Jan-15	0.0d LR190	LR245	326.0d			i I			11-			🗣 Final	EIS Issue						1 1	
		03 Safety Review	14-Dec-11	05-Dec-14	778.0d		349.0d			i I			+			C.Q.1			afety Re	wew			1 1	
	LR205	Technical Review	13-Feb-13	06-May-14	320.0d LR175	LR215	349.0d			i I					- Te	conical R	view						1 1	
	LR210	Concurrent LWA Review	14-Dec-11	08-Jan-13	280.0d LR170	LR215	804.0d			11			- C4	ncurre	i LVA	Review								
	LR215	Resolution of Open Items and ACRB Rev	07-May-14	07-Oct-14	110.0d LR205, LR210	LR220	349.0d				-++-		+!	1	-	Resolut	on of Op	en item	s and A	CRS Re	dew.			
	LR220	FBER Issuance	08-Oct-14	05-Dec-14	43.0d LR215	LR245	349.0d						11		- F	FSER	Issuance							
	C.Q.10.15.02.03	.04 Preliminary Legal Proceedings	13-Feb-13	10-Mar-15	540.0d		282.0d			!						- C.C	10.15.0	2.03 04	Preimi	inary Leg	al Proceed	lings		
	LR225	Petitions and Answers	13-Feb-13	11-Jun-13	85.0d LR175	LR230	282.0d			!			₩ <u></u>		ons and									
	LR230	Ruling on Petitions to Intervene	12-Jun-13	14-Oct-13	89.0d LR225	LR235	282.0d						5				to interv	ene						
	LR235	Mandatory Discovery	15-Oct-13	25-Nov-13	30.0d LR230	LR240	282.0d							50	Mandat	oly Disco	ery							
	LR240	Summary Disposition	26-Nov-13	10-Mar-15	336.0d LR235	LR245	282.0d							╽┡┲═		Bun Sun	imary Di							
		0.05 Public Hearing	11-Mar-15	05-Apr-16	280.0d		282.0d			11											lic Hearing			
	LR245	Public Hearing Process	11-Mar-15	05-Apr-16	280.0d LR200, LR220, LR240	LR250	282.0d										*	ubik: H	earing P	Process				
	LR250	ESP/LWA issued		05-Apr-16	0.0d LR245, LR195	LR285	282.0d	ļ.				₩	_			ļ		8P/ W	A Issue	đ				
0	Q.10.15.03 Combi		21-Jan-09	19-Aug-21	3281.0d		0.0d		•	!														C
	C.Q.10.15.03.01	OL Application Preparation	21-Jan-09	08-Apr-14	1359.0d		20.0d		7				1		- C.C	10.15.03	01 COL	Applica	dion Pre	eparation				
	aining Level of Eff	ort Actual Work	Critical P	emaining Wor			Page 11 of 5	5				П	ASK 1	iter: Al	I Activi	tles								
	-			-	`		-																	
лU	al Level of Effort	Remaining Work 🗅	Start Con	straint	1																		(c) Prim	aver

NOND INTEODATED SCHEDULE	Identifier:	PLN-2924	
NGNP INTEGRATED SCHEDULE	Revision:	1	
DEVELOPMENT PLAN	Effective Date:	01/09/2012	Page: 16 of 59

	ATED PLANNING																										
	Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	20	08	2009 2010	20	011	2012	2	013	2014	20	15	2016	20	117	2018	201	19	2020	202	21
LR255	Decision on NHSB Design Conditions		21-Jan-09	0.04	NH0095, NH0125, NH0145, NH0165, NH0185, NH0210, NH0225, NH0210, NH0225, NH0240, NH0255, NH0355, NH0375, NH0355, NH0415, NH0455, NH0455, NH0455, NH0455, NH0455, NH0455, NH0455, NH0455, NH0555, NH0555, NH0555, NH0555, NH0555, NH0555, NH0555, NH0555, NH0555, NH0555, NH0555, NH0555, NH0555, NH0555, NH0555, NH0555, NH0555, NH0355, HT0355, HT0355, HT0355, HT0355, HT0355,	LR260	362.0d			Decision én NH	88 Des	ign Ca	dNicns	5													
LR257 LR260	COLA Planning PSID Development	01-Jul-09 31-May-10	28-May-10 30-Aug-11		LR120 LR125, 8A290, PM220, LR255, LR257, PM230, 8A265	LR260 LR265	0.04					lantilio	D Dev	velopme	nt												
LR265 LR270	Submit PSID COLA Development	31-Aug-11	30-Aug-11 08-Apr-14		LR260, 8A265 LR265, FL80922, 8A565, 8A560, FL80360	LR270, LR275 LR282	0.0d 20.0d				+		bmil Pi	SID		-	A Dev	elopme	nt								
0.0.10.15.03.02.0	COL Pre-Application Program	31-Aug-11	06-May-14	700.0d			0.0d					1				-	¢.10.15	C 1 1 2	co 1	n Anni	Ication	Progra					
LR275	PSID Review & Policy Issues	31-Aug-11			LR265	LR280	0.00					_		PSIC	Revie		licy Issu		1	T							
LR280	PSID Technical issues	24-Oct-12	06-May-14	400.0d	LR275	LR282	0.0d						G				BID Tech	n ri cal Is	ssues								
C.Q.10.15.03.03 C	OL NRC Review	07-May-14	03-May-18	1042.0d			0.0d		hh		†		#-+-		11		;					- C.O	Q.10.15.	03.03 (COL NR	(C Rev	lew.
LR282	COL Application Submittal	07-May-14			LR270, LR280, PM310	LR283	0.0d									-	1		Bubmit	a							
LR283	Acceptance Review	07-May-14			LR282	LR285, LR320, LR332	60.0										Accepta	nce Re									
LR285	COL Environmental Review 3.01 NRC Safety Review	07-Jul-14	06-Jul-16		LR250, LR283	LR340	216.0d										+		<u> </u>			ental Re	eview 3.03.01 N				
LR320	NRC Technical Review	07-Jul-14 07-Jul-14	04-May-17 04-May-17	739.0d	LR283, FL80545,	LR325, LR330	0.0d		├ ├	·· - ··-	+		╫╌┼╌							- II -			al Review		nety Rev	new .	
					FL80665, FL80415															11	ΠΙ			~			
LR325	ACR3 Meetings	28-Dec-16	30-Mar-17		LR320	LR330	26.0d															/eeting					
LR330	FBER Issuance	30-Mar-17	04-May-17		LR320, LR325	LR340, LR365	0.0d										1				BER	Issuan					_
LR332	3.02 COL Legal Process Petitions and Answers	07-Jul-14 07-Jul-14	03-May-18 15-Aug-14	999.0d	LR283	LR334	0.0d 35.0d							1			Petition	the set				- 6.0	Q.10.15.	03.03.0	12 COL	Legal	PTO
LR334	Ruling on Petitions to Intervene	18-Aug-14	05-Mar-15		LR332	LR336	35.00 35.0d		⊦ ∤	·· - ··-	+		╫╍┾╍														
LR336	Mandatory Discovery	06-Mar-15	16-Apr-15		LR334	LR338	35.0d									1		Manda	tory Dis	cover-							
LR338	Summary Disposition	17-Apr-15	16-Mar-17		LR336	LR340	35.0d													8			osition				
LR340	COL Public Hearing Process	05-May-17	03-May-18		LR338, LR285, LR330	LR341	0.0d																OL Public	: Hearin	ng Proce	:55	
LR341	CDL Issued		03-May-18	0.0d	PM440, LR340	NH6820, NH6825, NH6830, NH6835, NH6860, NH6895, NH6901, NH6910, NH6925, NH6935, NH6940, NH6945	0.04															-9- bo	DL Issuer	d			
C.Q.10.15.03.04 II	TAAC Completion/Final Review	10-Dec-20	19-Aug-21	180.0d			0.0d				†		# - † -				+	-#		-+++					•	≓‡÷	0
LR345	Public Notice for ITACC Completion		10-Dec-20		PM520	LR355	0.0d										1										lic N
LR350	Public Notice for Non-mandatory Hearing		10-Dec-20		PM520	LR355	0.0d																			Pupil	lic N
LR355	Non-mandatory Hearing Process	11-Dec-20	19-Aug-21	180.0d	LR350, LR345	LR360	0.0d										<u> </u>										,
maining Level of Eff	ort Actual Work	Critical Re	emaining Wo	rk .		P	age 12 of 5	55					п	FASK 1	iter: Al	I Activ	tles										

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Idaho National Laboratory

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		Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	20	800	2009	2010	2011	2012	20	113	2014	2015	2016	20	017	2018	2019	2020	2021	\mp
	LR360	Approval to Load Fuel		19-Aug-21	0.0d	LR355	PM810, FL30940	0.0d		П																App
C.Q	2.10.15.04 Comme	rolal Decign Certification	05-May-17	05-Jan-24	1741.0d			332.0d	[T-1-1				TT T				···			-					
L	LR365	Commercial DCD Development	05-May-17	20-Sep-18	360.0d	MAT1260, MAT1285, LR330	LR370	813.0d												 † □	++		mmercial	DCD Dev	elopment	νt
L	LR370	Submit Commercial Design Document	21-Sep-18		0.0d	LR365	LR375	813.0d							1		1							nmercial D	esigni Do	ocum
L	LR375	NRC Acceptance Review	21-Sep-18	13-Dec-18	60.0d	LR370	LR380	813.0d														┕╼───	NRC Acc	eptance R	eview	
L	LR380	NRC Technical Review	19-Oct-20	19-Aug-22	480.0d	LR375, FL80940	LR385	332.0d																Le 🗖		_
	LR385	DC Hearing Process	22-Aug-22	21-Jul-23		LR380	LR390	332.0d																		
	LR390	DC Rule Making	24-Jul-23	05-Jan-24		LR385	LR400	332.0d																		
	LR400	Commercial Design Certified		05-Jan-24		LR390		332.0d																		
	0.20 Conceptual	•	01-Oct-08	04-Jul-11	704.0d			3596.0d					17 9		Concep	rtual Des	-									
		Analysis Doouments	02-Oct-08	13-Aug-10	472.0d			3827.0d	.		<u>.</u>	C.C	10.20	4 Batety	Analys	Is Docu	ments									
	3A260	Preliminary Integrated Safety Assessment	02-Oct-08	25-Nov-09		PM150, 3A280, 8A305, 8A315	8A265	339.0d		F		reilminary	Integra	ed Barlety	Asses	sment										
s	8A265	Support Preliminary Safety Information Document	01-Mar-10	13-Aug-10	120.0d	8A260, 8A290, 8A330, 8A440, 8A515	LR260, LR265	272.0d			ب ور ا	- Sup	sport Fin	intinary :	Batety I	nformati	on Dop	ument								
s	8A280	Preliminary Criticality Safety Assessments	02-Oct-08	18-Mar-09	120.0d	PM150	8A290, 8A285, 8A260	519.0d		╞╪	Prelimina	ry Critical	lly Sale	/ A ssess	ments											
s	8A285	Criticallity Safety Analysis Work Plan	02-Oct-08	18-Mar-09	120.0d	8A280	8A290	519.0d		┝╍╡╡	Criticalit		nalysisi	Volk Flar	1											
s	8A290	Draft Criticality Safety Analysis Report	19-Mar-09	02-Sep-09	120.0d	SA280, SA285	LR260, 8A265	519.0d	1	[- Dra	t Criticalit	y Safety	Analysis	Report											
0	C.Q.10.20.14.01 He	eat Transport Failures & Thermal Events	05-Jan-09	13-Aug-10	420.0d			272.0d	·····			C.0	10.20	4.11 He	at Tran	sport Fal	liures &	Thermal	Events							
	8A295	Select Relevant Software	05-Jan-09*	27-Mar-09	60.0d		SA305, SA300	272.0d		کا ا	Select R	elevan: S	otware													
	8A300	Define VHTR Operating/Accident Limits (draft)	05-Jan-09	19-Jun-09	120.0d	8A295	8A305, 8A315	272.0d			Defin		perating	Avocident	Linits	(dreft)										
	8A305	Develop SW Model(s) Based On Equip List	22-Jun-09	06-Nov-09	100.0d	8A295, 8A300, 8A480	SA310, SA260	272.0d			┝╍╤╴┇	evelop SV	VModel	a)Based	On Eq	Jp List										
	SA310	Validate Software Model	09-Nov-09	04-Dec-09	20.0d	8A305	8A320	272.0d	1		. ⊾ ,	alidate Se	itware k	lbbel												
	8A315	Define Equip Failures & Accident Scenarios (H2 Plant)	30-Mar-09	11-Sep-09	120.0d	8A300, 8A350	SA320, SA260	332.0d			Def	ine Equip	Fallures	& Accide	nt Scer	narios (H	i2 Plant	5								
	8A320	Model SS Operations and Evolutions	07-Dec-09	26-Feb-10	60.0d	8A310, 8A315	8A325	272.0d	1		┊╘┓	Model S	8 Opera	ions and	Evolut	ons										
	8A325	Model H2 and VHTR Plant Translents	01-Mar-10	21-May-10	60.0d	8A320	8A330	272.0d			5	Model	12 and	WHTE PI	ant Tra	nsients										
	8A330	Model Fallures/Scenarios	24-May-10	13-Aug-10	60.0d	8A325	SA680, SA685, SA265	272.0d				• • •. <u>•</u> •	del Fallu	es Scen:	arios											
0	C.Q.10.20.14.02 Pr	obabilistic Risk Assessment	02-Oct-08	15-Apr-10	386.0d			3913.0d		+				a Propat				t I								
	C.Q.10.20.14.02.	01 Internal Events PRA Model	03-Nov-08	26-Aug-09	201.0d			4079.0d	· · · · ·		C.Q	10.20.14		fernal Ev	ents Pl	RAMode	el			TT						
	8A335	Review DPP PRA Models	03-Nov-08*	19-Dec-08	35.0d		8A340	332.0d		l 🖽	Review DP	PERAM	oleis													
	8A340	Definition of Modes and States	22-Dec-08	02-Jan-09		8A335, 8A480	8A345	332.0d		111	Definition of		nd State	\$												
	8A345	Initiating Events Analysis	05-Jan-09	13-Feb-09		8A340	8A350, 8A415	332.0d		l i l		vents An	F 11		1		- I i									
	8A350	Accident Sequence Analysis	16-Feb-09	27-Mar-09	30.06	8A345	8A365, 8A380, 8A385, 8A390, 8A395, 8A420, 8A400, 8A315	332.0d			Accideni	Sequenc	e Analys	15												
	8A355	Systems Analysis	04-Dec-08	03-Jun-09	130.0d	8A480	8A365	414.0d	l		Syster	ns Analysi	6	***												
	8A360	Data Analysis	04-Dec-08	14-Jan-09	30.0d	8A48D		4239.0d			Data Analy	sis														
	8A365	Human Reliability Analysis	04-Jun-09	15-Jul-09	30.0d	8A350, 8A355	8A370	414.0d			Huma		ity Anala	985												
	8A370	Preliminary Internal Events PRA Model	16-Jul-09	26-Aug-09	30.0d	8A365, 8A485, 8A420	8A405, 8A445, 8A570	414.0d			Prel	minary in	ternal Es	enis PR/	Node											
	C.Q.10.20.14.02	02 External Events PRA Model	30-Mar-09	19-Nov-09	169.0d			383.0d	.	Lill	1	.0.10.20.	14.02.02	Esterna	I Event	S FRA M	lodil]								
	8A380	Internal Flooding Analysis	30-Mar-09	31-Jul-09		8A350, 8A480	8A405	437.0d	l		Inter	ial Flopdi	F 11	ŧ₩[`T``				T.		TTT.	1				1	
	8A385	Internal Fire Analysis	30-Mar-09	31-Jul-09	90.0d	SA350, SA480	3A405	437.0d			Hinter	al Fire A	nalysis													
	8A390	Seismic Risk Analysis	30-Mar-09	15-Oct-09		SA350, SA480	SA405, SA425	358.0d					t Analys													
	8A395	Hydrogen Hazards Analysis	30-Mar-09	15-Oct-09		8A350, 8A480	3A405	383.0d			• 1	drogen H	1 11	ndi ysis												
	SA400	Other External Hazards Analysis	30-Mar-09	19-Jun-09	60.0d	8A480, 8A350	3A405	467.0d			Other	External I	Hazards	de lysis	1											
Romal	ining Level of Effo	Actual Work	Critical Re	emaining We	ari:			Page 13 of :	55					Т	ASK fill	ter: All	Activiti	85								

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	Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	20	900	2010	2	011	201	2	2013	3	2014	2	015	2016	5	2017	20	18	2019	20	20	2021	1
8A405	Preilminary External Events Analysis	16-Oct-09	19-Nov-09	25.0d	8A370, 8A380, 8A385, 8A390, 8A395, 8A400, 8A485	8A450	383.0d				Preilmin	pry Ex	denhal	Exent	s Anal	ysis												T	Γ	
C.Q.10.20.14.0	2.03 Event Consequence Analysis	16-Feb-09	15-Apr-10	304.0d			358.0d				- c.c	10.20	114.02		ventio	onser	uenc	e Ana	avsis -											
8A415	Thermal and Fluid Flow Analysis - Scope of Analysis Cases	16-Feb-09	27-Feb-09	10.0d	8A345	8A420	482.0d		╞╿	hermal	and Flu	ld Flo	w Ana	yeis -	Scope	ofAr	atysis	5 C : 58	\$											
3A420	Thermal and Fluid Flow Analysis - Complete Cases for Sequence	30-Mar-09	08-May-09	30.0d	8A350, 8A415	8A370, 8A425	462.0d		-1	Therm	al and I	fiuld F	low An	alysis	- Con	npilete	Case	ster:	Sequer	ice De	velopm	ent								
SA425	Thermal and Fluid Flow Analysis - Complete Cases For Source Term	16-Oct-09	19-Nov-09	25.0d	SA390, SA420	8A430	358.0d				Therma				alysis	- Con	piete	Case	s For S	Bounce	Term)evelo	pment							
8A430	Source Term Analysis	20-Nov-09			8A425	SA435, SA440	358.0d		П	-9	Sourc	e Tem	n Anat	6 42															1	
8A435	Radiological Dose Analysis	29-Jan-10	04-Mar-10	25.0d	8A430	3A440	358.0d			15	Radi	și oglea	al Dioles	(Inal)	ysis				1											
3A440	Chapter 15 Safety Analysis	05-Mar-10	15-Apr-10	30.0d	8A430, 8A435	SA265, SA578	358.0d			두	d <u>b</u> ha	oter 1	al Diode IS State	te Ana	lysis															
	2.04 Risk Analysis	27-Aug-09	17-Dec-09	81.0d			383.0d					20.14	.02.04	154	Analy	sis			1											
3A445	Event Sequence Preliminary Internal Events Quantification	27-Aug-09			8A370	8A495, 8A500	414.Dd			EV		uente	e Priešr		Intern				cation											_
8A450	Event Sequence Preliminary External Events Quantification	20-Nov-09	17-Dec-09		8A405	8A500	383.0d				Event 8																		T	
	2.05 Design and Licensing Support & Interf	02-Oct-08	11-Mar-10	361.0d			383.0d		1		e d.Q.	10.20.	14.02		signa	ndLlo	ensin	ig Sup	port &	Interfa	ces									
84480	Initial Design And Dite Assumptions for PRA	02-Oct-08	03-Dec-08	45.0d	PM150	8A355, 8A360, 8A380, 8A385, 8A390, 8A395, 8A400, 8A340, 8A405, 8A305, 8A490	344.0d		Initia	el Desig	an And :	Site As	ssumer	30151	or PR/															
34485	Preliminary Design and Site Input to PRA	04-Dec-08	01-Jul-09	150.0d	8A480, BOP015, NH8100, NH8150, NH8120, NH83200, NH8220, NH83400, NH8320, NH84400, NH8420, NH84400, NH8420, NH8450, NH8450, NH8450, NH8550, NH8520, NH8550, NH8520, HT8255, HT8275, HT8295	8,4370, 8,4405, 8,4605	424.0d] **-		-Preli		<u>Şesişr</u>		2141 ligg	out to P	PRA.														
3A490	Initial LBE's for Conceptual Design	04-Dec-08	14-Jan-09	30.0d	8A480	8A510	644.0d	44	l Inf	iai LBE	s for C	oncep	tua De	slan																
3A495	LBE Update based on partial PRA Results	24-Sep-09	04-Nov-09	30.0d	8A445	8A500	414.0d	·····		ian π	BE Upd	tate ba	used of	i dan k	al PR/	Res	its.	·	÷	#	·	· ++	· <mark>-</mark>							•
SASDD	Preliminary PRA based LBE's		28-Jan-10	30.0d	8A445, 8A450, 8A495	8A515	383.0d			-9	BE Upd Prelim	anary i	PRAD	26 C L	BES															
8A510	initial input to Safety Classes	15-Jan-09	28-Jan-09	10.0d	8A490	8A515	644.0d	_	l Ini	tial np	ut to Sa	ety CI	lasses																	
8A515	Preliminary PRA Based Safety Classes	29-Jan-10	11-Mar-10		8A500, 8A510	8A265	383.0d		·	··· L_	Freil	minary	PRA	Base -	Safet	y Clas	ses													
	ar Heat Supply System (NHSS)	02-Oct-08	04-Aug-10	465.0d			1131.0d	+		<u> </u>			20.20	Nucl	ear He	at Bu	poly 3	3ys e n	(NH8	8)										
	NHSS Conceptual Design Report	02-Oct-08	04-Aug-10	465.0d			1131.0d						20.2		наа с	once	péual I	Deala	Repo	art 👘		+							11	•
NHBO50	Conceptual Design Report Preparation	01-Oct-09	-		NH0115, NH0140, NH0160, NH0180, NH0200, NH0220, NH0240, NH0282, NH0370, NH0380, NH0350, NH0370, NH0350, NH0370, NH0470, NH0490, NH0470, NH0490, NH0510, NH0570, NH0550, NH0570,	NH8070, NH8065	279.0d				r.		Dedin																	
NH8065	Conceptual Cost Estimate	06-Aug-09	20-Jan-10	120.0d	NHSD50	NH8070	279.0d				Conce	ptual (Cost	stinat	•															_
naining Level of Ef	fort Actual Work	Critical Re	emaining Wo	ark			Page 14 of 5	5							TAS	< filter	r: All /	Activi	tles											

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	Activity Name	Start	Finish	Planned Predecessors	Successors	Total Float	2008	20	09 2	010 2	2011	2012	2013	3 20	14 20	115	2016	20	117	2018	2019	2020	0 3
				Duration															-				+
NH8070	Conceptual Design Review	21-Jan-10	17-Mar-10	40.0d NH8050, NH8065	NH8075	279.0d	·			Conceptua			1					TT					
NH8075	Independent Review	18-Mar-10	12-May-10	40.0d NHS070	NHS080	279.0d			🛏	Independ	dent Fe	de el	1										1
NH3080	Incorporate Review Comments	13-May-10	07-Jul-10	40.0d NH8075	NH3085	279.0d		·}}		Incorpo	orate Po	vev Con	nments	tt				+++					
NH8085	Issue NH88 Conceptual Design Report		07-Jul-10	0.0d NHSDSD	NH3090	279.0d						eceptual		Report	l i								L
NH8090	NHSS Conceptual Design Complete		04-Aug-10	0.0d NHSD85	PM220	279.0d			[tal Desi		piete	l i								L
C.Q.10.20.20.0	1.01 Reactor Unit System	02-Oct-08	30-Sep-09	245.0d		1351.0d			- c.a.	10.20.20.0	1.01	actor Un	it Syster										L
	0.01.01.01 Reactor Pressure Vessel	02-Oct-08	30-Sep-09	245.0d		1351.0d			C Q.	. L L	1.01.01	Reactor		e Vesse									L
NH3095		02-Oct-08	21-Jan-09	80.0d 8E305, 8E295, PM150	NH8100, LR255	279.0d	=		nceptual	TF&Rs								+++					-
NHS100	Conceptual Studies/Analysis	22-Jan-09	10-Jun-09	100.0d NH8095	NHS110, SA485	279.0d		le(Concept	tual Studies	stanaly												L
NHS110	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d NHS100	NH8115	279.0d			Conc	actual Dea	and the second		1										L
NHS115	Conceptual System Design Descriptions (SDDs)/Specs	11-Jun-09	30-Sep-09	80.0d NHS110	NH8120, NH8050	279.0d			Conc	eptual Sys	stern De	sign Desi	riptions	(80Ds)	Bpecs								
NHS120	Draft Procurement Specification	11-Jun-09	30-Sep-09	80.0d NH8115	NHS121	1351.0d			Draft	Procurem	ent Ste	cilication											L
NH8121	Submit Proc.Spec to RPV Fabrication		30-Sep-09	0.0d NH8120	NH8805	1351.0d		¦₹	Subn	nt Proc.Sp	ec to:	V abrid	ation	tt	 			••••					ŀ
C.Q.10.20.2	0.01.01.02 Core Internal Structure (Graphite)	02-Oct-08	30-Sep-09	245.0d		279.0d			C.Q.		1.01.0	Core Int		ucture /	raphite)								L
NH8125	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d 8E315, PM150	NH8130, LR255	279.0d		d 🖬	nceptual														L
NH8130	Conceptual Studies/Analysis	22-Jan-09	10-Jun-09	100.0d NH8125	NH8135	279.0d		F	Concept	tual Studie:	s/Analy												L
NH8135		11-Jun-09	30-Sep-09	80.0d NHS130	NHS140	279.0d			Conc	aptual Dea	winger	add s											L
NH8140	-	11-Jun-09	30-Sep-09	80.0d NH8135	NH8050	279.0d		·}]	Conc	eptual Dia eptual SDI	Os/Se	.	·i	<u> </u> + <mark>+</mark>	·	·-+ <u>+</u>		••••	·- H h				ŀ
	D.D1.01.03 Reactivity Control System (Refle		30-Sep-09	245.0d		279.0d		1	C.Q.				Contr	ol Syster	(Reflects	-							L
NH8145		02-Oct-08	21-Jan-09	80.0d PM150	NH8150, LR255	279.0d			nceotual 1	TAFRS	··~ [1]]	l i i i i i i i i i i i i i i i i i i i	1 - 1	1.0120	1 June 10 Car	~,							l
NH8150		22-Jan-09	10-Jun-09	100.0d NH8145	NH8155, 8A485	279.0d	-'			tual Studies	الخاد												L
NH8155	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d NH8150	NH8160	279.0d		「뮥	Conc	eptual Dia		I.											l
NH8160	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d NH8155	NHS050	279.0d		⊒		eptual SDI	- 11	H	·•	∤ ⊦	····	·- 		•••••	·- H ŀ				ŀ
	0.01.01.04 Neutron Source System (Fuel)	02-Oct-08	30-Sep-09	245.0d	NHOUSU	279.00 279.0d		1 1	C.Q.			Reutron	-	System									I
NH8165		02-Oct-08	21-Jan-09	80.0d PM150	NH8170, LR255	279.0d			nceptual *		··~-11	a second	Cource	System	ruei)								I
NHS170	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d NH8165	NHS175, SA485	279.0d	- r	변객															I
NH8170	Conceptual Studies Analysis Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d NH8170	NH8175, 80485	279.0d			Concept	tual Studies			!		ļ								I
NHS180	•	11-Jun-09	30-Sep-09	80.0d NH8175	NHS050	279.0d		-]	Conc	eptual Dia eptual SDI	- 11	100 s	·ii	↓↓	·			•••••	·- H h				ł
					NHSUSU			4				11											L
	1.02 Core Conditioning System	02-Oct-08	30-Sep-09	245.0d		279.0d		1	C.Q.			re Condi		lystem									l
	0.01.02.01 CCS Blower	02-Oct-08	30-Sep-09	245.0d					C.Q.		1.02.91	CCB BI	wer										L
NH8185	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d PM150	NH8190, LR255	279.0d	- F	PI	nceptual [•]														L
NH8190		22-Jan-09	10-Jun-09	100.0d NH8185	NH8195	279.0d			Concept	tual Studies optual Dia	s Anlais	#	··		·				 				ł
NH8195	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d NH8190	NHS200	279.0d			Conc			100515	1										L
NHS200	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d NH8195	NH8050	279.0d		4															L
	0.01.02.02 CCS Heat Exchanger	02-Oct-08	30-Sep-09	245.0d		279.0d		Ъı	C.Q.		1.02.03	ССВ Не	at Exch	anger	1								I
NH8210		02-Oct-08	21-Jan-09	80.0d PM150	NH8212, LR255	279.0d			nceptual *	I AFRS	1 11												l
NH8212		22-Jan-09	10-Jun-09	100.0d NHS210	NH8215	279.0d	·		Concept	tual Studies reptual Dia	s Analy	1											ŀ
NH8215	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d NHS212	NH8220 NH8050	279.0d				eptual Dia eptual SDI													ſ
NH8220	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d NH8215	NHSUSU			<u> </u>															L
	0.01.02.03 CC8 Valves	02-Oct-08	30-Sep-09	245.0d		279.0d				10.20.20.0	1.02.0	CCB Va	ives										L
NH8225		02-Oct-08	21-Jan-09	80.0d PM150	NH8230, LR255	279.0d		<u> </u>	nceptual														L
NH8230	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d NH8225	NH8235	279.0d	·		Concept	tual Studies	s Analy	#			·								4-
NH8235	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d NH8230	NHS240	279.0d		••	Conc	aptual Dia aptual 301	wings	/eddls											L
NH8240	Conceptual 3DDs/Specs	11-Jun-09	30-Sep-09	80.0d NH8235	NH8050	279.0d		4	Conc	eptual SDI	Ds/Spe	*											L
	0.01.02.04 CCS Piping	02-Oct-08	30-Sep-09	245.0d		279.0d	•		C.Q.		1.02.04	COB PIp	ang										L
NH8245	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d PM150	NH8250, LR255	279.0d	H	□ ○	nceptual *	TAFRS													L
NH8250	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d NH8245	NH8255	279.0d			Concept	tual Studie: optual Dia	s Analy	ŧ.	.	I									L
NH8255	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d NH8250	NH8258	279.0d		••••	Conc	eptual Dia	wings	Andelis -											ſ
NH8258	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d NH8255	NH3050	279.0d		4	Conc	eptual Dia eptual SDI	Os/Sp	1			i i								L
ing Level of Ef	fort Actual Work		emaining Wo	1		Page 15 of 5	5					ΠA	SK filfe	r: All Ac	tuttes								-

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		PLANNING																				
	Activity N	ime	Start	Finish	Planned Predecessors Duration	Successors	Total Float	2008	2009	2010 20	11	2012	2013	2014	2015	2016	201	17	2018	2019	2020	
C.Q.1	0.20.20.01.03 Reacto	r Cavity Cooling System	02-Oct-08	30-Sep-09	245.0d		279.0d	╵╼╧	- C.G	10.20.20.01.	oğ ilde	ctor Cavit	y dooling	Bystem;		<u> </u>	+++	╥┸	_		-	
NH	8260 Conceptu	1 T&FRs	02-Oct-08	21-Jan-09	80.0d PM150	NH8265, LR255	279.0d		Conceptual	TAFRS												
NH	8265 Conceptu	al Studies Analysis	22-Jan-09	10-Jun-09	100.0d NH8260	NH8270, 8A485	279.0d	🖬	Conces	tual Studies /	Analyse											
NH	8270 Conceptu	al Drawings/Models	11-Jun-09	30-Sep-09	80.0d NH8265	NH8275	279.0d		Con	ceptual Draw	inbali	dels					-+++					
NH	8275 Conceptu	al SDDs/Specs	11-Jun-09	30-Sep-09	80.0d NH8270	NH8050	279.0d		-Con	ceptual SDD:	s/Bpecs	1 I I		1								
C.Q.1	0.20.20.01.04 Fuel H	andling and Storage System	02-Oct-08	30-8ep-09	245.0d		279.0d			10.20.20.01.		Handling	and Store	ge syster	m							
C.	2.10.20.20.01.04.01 F	uel Loading Subsystem	02-Oct-08	30-Sep-09	245.0d		279.0d	+	- C.Q				ng Subsys									
	NHS280 Conceptu	1 T&FRs	02-Oct-08	21-Jan-09	80.0d PM150	NH8285, LR255	279.0d		Conceptual	T&FRs												
	NHS285 Conceptu	al Studies Analysis	22-Jan-09	10-Jun-09	100.0d NHS280	NH8290, 8A485	279.0d		Conces	tual Studies /	Agailai						-+++					
	NHS290 Conceptu	al Drawings/Models	11-Jun-09	30-Sep-09	80.0d NH8285	NH8292	279.0d		Gene Con	ceptual Draw	(ingelijke	dels										
		al SDDs/Specs	11-Jun-09	30-Sep-09	80.0d NHS290	NH8050	279.0d		-Con	ceptual SDD:	s/Seecs											
	-		02-Oct-08	30-Sep-09	245.0d		279.0d			10.20.20.01	04.02	High-level	Waste Ha	ndline Sul	bsystem							
	NH8295 Conceptu		02-Oct-08	21-Jan-09	80.0d PM150	NH8300, LR255	279.0d	-]	Conceptual					T								
		al Studies Analysis	22-Jan-09	10-Jun-09	100.0d NH8295	NH8305, 8A485	279.0d			tual Studies /	Analyse	╏╌╟╴╌─┝╴	<u>{</u> <mark>}</mark>		· + -·		-+++					
		al Drawings/Models	11-Jun-09	30-Sep-09	80.0d NH8300	NH8310	279.0d			ceptual Draw												
		3DDs/Specs	11-Jun-09	30-Sep-09	80.0d NH8305	NH8050	279.0d			ceptual SDD:	5 31 1											
	0.20.20.01.05 Hellum		02-Oct-08	30-Sep-09	245.0d		279.0d	∣ᆋ━		10.20.20.01.		un Servic	e System									
		HTS Inventory Control System	02-Oct-08	30-Sep-09	245.0d		279.0d			1 1			nterv Cont	rol over	_ II							
	NH8315 Conceptu		02-Oct-08	21-Jan-09	80.0d 8E300, PM150	NH8320, LR255	279.0d										-+++					
		al Studies Analysis	22-Jan-09	10-Jun-09	100.0d NH8315	NH8325, 8A485	279.0d		Conceptual	tual Studies /	والعامه											
		al Drawings/Models	11-Jun-09	30-Sep-09	80.0d NH8320	NH8330	279.0d			ceptual Draw	: : : []]											
		al SDDs/Specs	11-Jun-09	30-Sep-09	80.0d NH8325	NH8050	279.0d			ceptual SDD:												
	-	HTS Inventory Control System	02-Oct-08	30-Sep-09	245.0d	NHOUSU	279.0d			4h 20 20 h1			ntery Cont		-							
	NH8335 Conceptu		02-Oct-08	21-Jan-09	80.0d PM150	NH8340, LR255	279.0d		Conceptual	TAFRS							-+++					
		al Studies Analysis	22-Jan-09	10-Jun-09	100.0d NH8335	NH8345, 8A485	279.0d		d	tual Studies /	اللال											
			11-Jun-09	30-Sep-09	80.0d NH8340	NH8350	279.00 279.0d	~			- i iII I											
		al Drawings/Models		30-Sep-09		NH8350 NH8050				ceptual Diaw ceptual SDD:	inge we	oes										
		al SDDs/Specs HTS Helium Purification System	11-Jun-09 02-Oct-08		80.0d NH8345 245.0d	NHOUSU	279.0d 279.0d		- C 0			рыта нап		tion Syst								
	NH8355 Conceptu		02-Oct-08	30-Sep-09 21-Jan-09	80.0d PM150	NH8360, LR255	279.0d		Conceptual			PHIS Hell	um Parinda	soon ays	em -			- H h				
	-		22-Jan-09	10-Jun-09	100.00 NH8355	NH3365, 8A485	279.0d		d1	tual Studies /												
		al Studies Analysis	11-Jun-09	30-Sep-09	80.0d NH8355	NH8365, 8A485 NH8370	279.0d				1.111	1 1										
		al Drawings/Models								ceptual Draw		oois										
		al SDDs/Specs	11-Jun-09	30-Sep-09	80.0d NH8365	NH8050	279.0d			ceptual SDD: .10.20.20.01.	s/Specs											
		HTS Hellum Purification System	02-Oct-08	30-Sep-09	245.0d		279.0d		C.0			ни вни	un Perifici	non eys	tem -		-+++					
	NH8375 Conceptu		02-Oct-08	21-Jan-09	80.0d PM150	NH8380, LR255	279.0d	-9	Conceptual													
		al Studies Analysis	22-Jan-09	10-Jun-09	100.0d NH8375	NH8385	279.0d		Conces		: : : []]											
	-	al Drawings/Models	11-Jun-09	30-8ep-09	80.0d NH8380	NH8390	279.0d			ceptual Diaw	E 11 1	dels										
	-	al SDDs/Specs	11-Jun-09	30-8ep-09	80.0d NH8385	NH8050	279.0d		-Con	ceptual SDD:	13111											
		and instrumentation System	02-Oct-08	30-Sep-09	245.0d		279.0d		C.Q		当畔	ord and in	stiumenta il Control S	tion Byste	em		-+++					
		perational Control System	02-Oct-08	30-Sep-09	245.0d		279.0d		C.Q	- FF	~¶	operations		system								
	NH8395 Conceptu		02-Oct-08	21-Jan-09	80.0d PM150	NH8400, LR255	279.0d		Conceptual													
		al Studies Analysis	22-Jan-09	10-Jun-09	100.0d NH8395	NH8405, 8A485	279.0d		Conces	tual Studies / ceptual Draw												
		al Drawings/Models	11-Jun-09	30-Sep-09	80.0d NHS400	NH8410	279.0d															
		al SDDs/Specs	11-Jun-09	30-Sep-09	80.0d NH8405	NHS050	279.0d			ceptual SDD:	s/Specs	.					-+++					
		eactor Protection System	02-Oct-08	30-Sep-09	245.0d		279.0d		C.G		06.62	Reactor Pr	otection 3	ystein								
	NH8415 Conceptu		02-Oct-08	21-Jan-09	80.0d PM150	NH8420, LR255	279.0d	-	Conceptual	TAFRS		11 I										
		al Studies Analysis	22-Jan-09	10-Jun-09	100.0d NH8415	NH8425, 8A485	279.0d		Conces					1								
		al Drawings/Models	11-Jun-09	30-Sep-09	80.0d NH8420	NH8430	279.0d			ceptual Draw		dels										
		al SDDs/Specs	11-Jun-09	30-8ep-09	80.0d NH8425	NH8050	279.0d			ceptual SDD:		[.]					-+++	- 				
_	-	quipment Protection System	02-Oct-08	30-Sep-09	245.0d		279.0d		C.Q		06.43	Equipment	Protection	i System								
	NH8435 Conceptu		02-Oct-08	21-Jan-09	80.0d PM150	NH8440, LR255	279.0d	-	Conceptual	TAFRS												
	NHS440 Conceptu	al Studies Analysis	22-Jan-09	10-Jun-09	100.0d NH8435	NH8445, 8A485	279.0d		Conces	tual Studies /	Adaba											
an Le	evel of Effort	Actual Work	Critical P	emaining Wo	nrik		Page 16 of 5	5				TAS	filter: All	Activitie	6							
յս	are of choic	Provide Viola	Chine al Pe	vernærning vik			-					1										

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ILEGR	ATED PLANNING	SCHI	EDUL	=												9-29	-20	000				
	Activity Name	Start	Finish	Planned Predecessors Duration	Successors	Total Float	2008	2009	2010	2011	2012	201	13 2	014	2015	2016	20	017	2018	2019	2020	20
NH8445	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d NHS440	NH8450	279.0d			Conceptua	Diawings	Medils	<u>†</u> T						ТТ			<u> </u>	<u>- </u>
NH8450	Conceptual SDDs/Specs	11-Jun-09	30-8ep-09	80.0d NH8445	NH3050	279.0d		_ ⊨	Conceptua Conceptua	300s/\$p												
C.Q.10.20.2	0.01.05.04 Post-event Monitoring and Reco	02-Oct-08	30-Sep-09	245.0d		279.0d				20.01.06.0	4 Faster	vent Mo	nitoring a	nd Reco	very syst	term						
NH3455	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d PM150	NH8460, LR255	279.0d	-	Concep	tual TAFR:	: !!		1										
NH3460	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d NH8455	NH3465, 3A485	279.0d			nceptual St	udles Ana	al i	1		l i								
NH8465	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d NH3460	NH8470	279.0d			Conceptua		Wedels											
NHS470	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d NH8465	NH8050	279.0d			Conceptua	abos/sp												
C.Q.10.20.2	0.01.06.05 Uninteruptible Power Supply	02-Oct-08	30-Sep-09	245.0d		279.0d			C.Q.10.20.	20.01.06.0	5 Uninter	ruptible l	Power 3	u p b.								
NH8475	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d PM150	NH8480, LR255	279.0d	-	Concep	tual TAFR:													
NH3480	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d NH8475	NH3485	279.0d			nceptual St	udies Aria												
NH3485	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d NH8480	NH8490	279.0d			Conceptua	Diawings	Wedels											
NH8490	Conceptual SDDs/Specs	11-Jun-09	30-8ep-09	80.0d NH8485	NH3050	279.0d		⊨⊒≖	conceptua	SDDs/Sp												
C.Q.10.20.2	0.01.06.06 1E Batteries	02-Oct-08	30-Sep-09	245.0d		279.0d	·····		C.Q.10.20.	20.01.06.0	6 E Batt	telles	-+		 		-+++					
NH8495	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d PM150	NH8500, LR255	279.0d	╞╌┋		tual T&FR													
NH3500	Conceptual Studies Analysis	22-Jan-09		100.0d NH8495	NH8505	279.0d	1		nceptual St													
NH3505	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d NH8500	NH8510	279.0d			Conceptua	1 !!	Weduls											
NH8510	-	11-Jun-09	-	80.0d NH8505	NH8050	279.0d			Conceptua													
	11.07 Cooling Water System	02-Oct-08		245.0d		279.0d				20.01.07		later Su	stem	+	 			·- -				
	0.01.07.01 Auxiliary Component Cooling W	02-Oct-08	30-Sep-09	245.0d		279.0d				20.01.07.0				ading Wa	ater Syste	em						
NH8515	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d PM150	NH3520, LR255	279.0d	╞╌┋	- 11		1 11	1177		T T	TT		c.m						
NH8520	Conceptual Studies Analysis	22-Jan-09		100.0d NH8515	NH3525, 3A485	279.0d			nceptual St													
NH8525	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d NH8520	NH8530	279.0d			Conceptua	1 1												
NH0525	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.00 NH8525	NHS050	279.0d			Conceptua				-+	·	— <mark> </mark>		·- ++	·- -				
	0.01.07.02 Equipment Protection Cooling Cl		30-Sep-09	245.0d	RHOUSS	279.0d				20 01 07 0				coline C								
NH8535	Conceptual T&ERs	02-Oct-08	21-Jan-09	80.0d PM150	NH3540, LR255	279.0d		_ 11	tual TBFR			iens Pilo	orcion o	oping C	icun.							
			21-Jan-09 10-Jun-09				-6															
NH8540	Conceptual Studies Analysis	22-Jan-09	10 0011 02	100.0d NH8535	NH3545, 3A485	279.0d			nceptual St													
NH8545	Conceptual Drawings/Models	11-Jun-09		80.0d NH8540	NH8550	279.0d			Conceptua			_ <u> </u> -	-+		<mark> </mark>		·- ++					
NH8550		11-Jun-09	-	80.0d NH8545	NHS050	279.0d			Conceptua C.Q.10.20.			_										
	11.08 Electrical Distribution System	02-Oct-08		245.0d		279.0d		_ 11			ie u cai i	Disenses	ion ayse									
NH8555	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d PM150	NH8560, LR255	279.0d			fual T&FR	1 11												
NH8560	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d NH8555	NH8565	279.0d			nceptual St													
NH8565	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d NH8560	NH8570	279.0d	·		Conceptua		++		-+		<mark> </mark>							
NH8570	Conceptual SDDs/Specs	11-Jun-09		80.0d NH8565	NH8050	279.0d			E	300s/8p												
	11.09 Reactor Building HVAC System	02-Oct-08		245.0d		279.0d		- I î '		20.01.09	eactor B	uliding H	HVAC Sy	sen								
NH8575	Conceptual T&FRs	02-Oct-08		80.0d PM150	NH3580, LR255	279.0d	╞╋															
NH8580	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d NH8575	NH8585	279.0d	*		nceptual St													
NH8585	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d NH8580	NH8590	279.0d	 -		Conceptua			_il.	- 		<mark> </mark>							
NH8590	Conceptual SDDs/Specs	11-Jun-09		80.0d NH3585	NH3050	279.0d			Conceptua													
	11.10 Primary Loop Initial Cleanup System	02-Oct-08		245.0d		279.0d		_ 11		20.01.10	ninay Lo	oop initi	al Clean	p System	n							
NH8595	Conceptual T&FRs	02-Oct-08		80.0d PM150	NH3600, LR255	279.0d	┝╍╡															
NH3600	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d NH8595	NH3605, 3A485	279.0d			nceptual St													
NH8605	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d NHS600	NH3610	279.0d	. .		Conceptua				1		<mark> </mark>							
NH8610	Conceptual SDDs/Specs	11-Jun-09		80.0d NH3605	NH3050	279.0d			Conceptua			1 T										
	Fransport System (HTS)	02-Oct-08	04-Aug-10	465.0d		1131.0d	- 14		C C	Q 10.203			System									
Q.10.20.30.04	HTS Conceptual Design Report	02-Oct-08	04-Aug-10	465.Dd		1131.0d	+			Q.10.203	104 нта	Conces	pluai Des	ilan Repo	art							
HT8215	Conceptual Design Report Preparation	01-Oct-09	20-Jan-10	80.0d HT8265, HT8285, HT8305, HT8330, HT8350, HT8370, HT8390, HT8410, HT8430, HT8310	HT8225, HT8220	279.0d				tual Desig	N Riesport P	Preparat	idn									
HT8220	Conceptual Cost Estimate	06-Aug-09	20-Jan-10	120.0d HT8215	HT8225	279.0d			Concep	tual Cost	slinate											
HT8225	Conceptual Design Review	21-Jan-10	17-Mar-10	40.0d HT8215, HT8220	HT8230	279.0d				ptual Des		- i - i										
ing Level of Ef	fort Actual Work	Critical B	Remaining Wo	rk		Page 17 of 5	5				π/	ASK fib	er: All A	ctivities								

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	Activity Name	Start	Finish	Planned Predecessors Duration	Successors	Total Float	2008	2009	9 2010	2011	2012	2013	2014	2015	2016	201	7 201	8 2019	2020	2
																				<u> </u>
rT8230	Independent Review	18-Mar-10	-	40.0d HT8225	HT8235	279.0d				dependent R		1 1 1								i
rT8235	Incorporate Review Comments	13-May-10		40.0d HT8230	HTS240	279.0d			1 7		even Co	i								
TS240	Issue HTS Conceptual Design Report		07-Jul-10	0.0d HT8235	HT8245	279.0d				ssue HTS C	onceptual		epart							
т8245	HTS Conceptual Design Complete		04-Aug-10	0.0d HT8240	PM220	279.0d		.	: T	HTS Conce				<u> </u>						
	1.01 Primary Heat Transport System	02-Oct-08	30-Sep-09	245.0d		1351.0d				0.30.04.01		· I I	on System	1						1
C.Q.10.20.30	.04.01.01 PHTS Circulator	02-Oct-08	30-Sep-09	245.0d		279.0d		_		0.30.04.01.0	1 PHTS C	liculator								1
HT8250	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d PM150	HT8255, LR255	279.0d	-0		eptual TBF	Rs		1 1 1								1
HT8255	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d HT8250	HTS260, SA485	279.0d			onceptual	Studies Ana		1 1 1		I						1
HTS260	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d HT8255	HT8265	279.0d		∽⊷	Concept	ual Diawings	Medels	1 1 1								1
HT8265	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d HTS260	HT8215	279.0d			Concept	ual SDDs/Sp				·						
C.Q.10.20.30	.04.01.02 PHT8 Valves	02-Oct-08	30-8ep-09	245.0d		279.0d			C.Q.10.2	0.30.04.01	2 111113 \	/alves								1
HT8270	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d PM150	HT8275, LR255	279.0d	-	Con	eptual T&F	Rs		1								1
HT8275	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d HTS270	HT8280, 8A485	279.0d	1			Studies Ana		1 1 1								1
HT8280	Conceptual Ordels Analysis	11-Jun-09	30-Sep-09	80.0d HT8275	HT8285	279.0d				ual Diawings										1
HT8285	Conceptual 3DDs/Specs	11-Jun-09	30-Sep-09	80.0d HTS280	HT8215	279.0d		` E		ual SDDs/8s				<u></u>						
	.04.01.03 Intermediate Heat Exchanger	02-Oct-08	30-Sep-09	245.0d	1119212	1351.0d		۲		0.30.04.01.0		إياسه	t Exchange							
HT8290	Conceptual T&FRs			80.0d PM150	UTODOS LIDDOS					Rs	s i nuerme		t Exchange							1
		02-Oct-08	21-Jan-09		HT8295, LR255	279.0d	-4													
HT8295	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d HTS290	HT8300, 8A485	279.0d				Studies Ana										
HT8300	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d HT8295	HT8305	279.0d			Concept	ual Diawings	Medels	<u></u>		Ļ		_ _				
HT8305	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d HTS300	HT8215, HT8310	279.0d		- E	Concept	ual SDDs/Sp		1 1 1								1
HT8310	Draft Procurement Specification	11-Jun-09	30-Sep-09	80.0d HT8305	HT8215, HT8311	279.0d				curement B				i						1
HT8311	Issue Procurement Spec to IHX Fabricator		30-Sep-09	0.0d HT8310	HT3560	1351.0d		⊢⊢	Issue Pr	ocurementia	et to IHX	Pabricato	ar 🛛							1
.Q.10.20.30	.04.01.04 PHTS Piping	02-Oct-08	30-Sep-09	245.0d		279.0d			C.Q.10.	0.30.04.01.0	4 IPHITS P	loing		I						1
HT8315	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d PM150	HT8320, LR255	279.0d	-		ceptual T&P											1
HT8320	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d HT8315	HT8325	279.0d			onceptual	Studies Ana										
HT8325	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d HTS320	HT8330	279.0d			Concept	ual Drawings	Models	1 1 1								1
HT8330	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d HT8325	HT8215	279.0d			Concept	ual SDDs/\$p										1
Q 10 20 30	.04.01.05 Pressure Relief System	02-Oct-08	30-Sep-09	245.0d		279.0d				0.30.04.01.	E Pressur	Belleta	vsiem	i						1
HT8335	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d PM150	HT8340, LR255	279.0d	-	Con		Rs										1
HT8340	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d HT8335	HT8345	279.0d			L	Studies Ana		++		÷						
HT8345	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d HT8340	HT8350	279.0d		╸		ual Drawings		1 1 1								1
			30-Sep-09	80.0d HT8345		279.0d				1 6		1 1 1								1
HT8350	Conceptual 3DDs/8pecs	11-Jun-09			HT8215				- Concept	ual SDDs/Sp	19 1 .	L L	nsport Sys							1
	1.02 Secondary Heat Transport System	02-Oct-08	30-Sep-09	245.0d		279.0d							nsport ays	em						1
	.04.02.01 SHTS Circulator	02-Oct-08	30-8ep-09	245.0d		279.0d			+	0.30.04.02	1 31153 (Sirculator		Ļ						
HT8355	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d PM150	HT8360, LR255	279.0d	-		ceptual T&F											
HT8360	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d HT8355	HT8365	279.0d		╸╸		Studies And										
HT8365	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d HT8360	Ht8370	279.0d			Concept	ual Diawings	Medels	1		i						
Ht8370	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d HT8365	HT8215	279.0d		_ F	Concept	ual SDDs/Sp	44	1		i I						
	.04.02.02 Hellum Isolation Valves	02-Oct-08	30-Sep-09	245.0d		279.0d				0.30.04.02.0	2 Bellum	Isolation \	/aives							
HT8375	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d PM150	HTS380, LR255	279.0d	-	Con	ceptual T&F	Rs						TT.				
HT8380	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d HT8375	HT8385	279.0d				Studies Ana				: I						
HT8385	Conceptual Drawings/Models	11-Jun-09	30-8ep-09	80.0d HT8380	HT839D	279.0d		┕━┢	Concept	ual Diawing	Medels	1		!						
HT8390	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d HTS385	HT3215	279.0d				ual SDDs/Sp				. I						
.Q.10.20.30	.04.02.03 SHTS Piping	02-Oct-08	30-Sep-09	245.0d		279.0d				0.30.04.02	занта к	iping								
HT8395	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d PM150	HT3400, LR255	279.0d		Con	eptual T&F					<u></u> ;₩						
HTS400	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d HT8395	HT8405	279.0d	1	-	onceptual	Studies Ana										
HT8405	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d HTS400	HTS410	279.0d				ual Drawings										
HT8410	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d HT8405	HT8215	279.0d		F		ual SDDs/8p				i						
	.04.02.04 SHTS Flow Coupling & Mixer	02-Oct-08	30-Sep-09	245.0d		279.0d		Ť		0.30.04.02		de de la	line & Max							
		02-Oct-08	21-Jan-09									1 44	and the set of the set of	¥						
HT8415	Conceptual T&FRs			80.0d PM150	HT8420, LR255	279.0d			ceptual T&P	1 1 1		1								
HT8420	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d HT8415	HT8425	279.0d			uonceptual	Studies And	PPP	<u> </u>		i						
vel of Effe	ort Actual Work	Ortilani D	emaining Wo	~		Page 18 of 5	15				ΤA	SK filter.	: All Activi	tles						

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		ATED PLANNING																			
		Activity Name	Start	Finish	Planned Predecessors Duration	Successors	Total Float	2008 2009 2	010 2011	2012	2013	2014	2015	5 20	16	2017	2018	2019	2020	20	21
	HT8425	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d HTS420	HT8430	279.0d		eptual Diawings	Madalas			· · · ·			Ē	4		_	┍┶┰	_
	HT8430	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d HT8425	HT8215	279.0d	-Conc	eptual SDDs/Spe						1 11/	1					
	C.Q.10.20.40 Hydrog	en Production System (HPS)	01-Oct-08	04-Jul-11	704.0d		41.0d			10.20.40	Hydrogen	Product	ibn Syster	(HPS)	1 11/	1					
	HP8010	NHI Interface	05-Jan-09*	04-Dec-09	240.0d	PM220	452.0d		Interface	Hi -i - i			·		┢╍╍┝╋┩	t <mark> </mark>					
	C.Q.10.20.40.01 S	stems Engineering Down Select/Decision	01-Oct-08	14-Sep-09	234.0d		291.0d	C.Q.1	10.20.40.01 8	errs Engine	ering Dov	vn Selec	Decision	Tree	1 11/	1					
		.01 Analyze Cost Comparisons	05-Jan-09	22-Jun-09	120.0d		291.0d	c. 0.10	20.40.01.01 Are		E I				1 11/	1					
	HP3100	Finish Economic Comparisons (WEC)		05-Jan-09"	0.0d	HP8105, HP8110	291.0d		mic Comparispe			T			1 11/	1					
	HP8105	Complete TRL/DRL Assignments	06-Jan-09	30-Mar-09	60.0d HPS100	HP8110	291.0d	Complete							1 11/	1					
	HP3110	Determine Costs to Complete TDRM Act	06-Jan-09	30-Mar-09	60.0d HP3100, HP31	05 HP8115	291.0d	-Determine			ctivities	· • • • • • • • • • • • • • • • • • • •	+		┢╍╍┝┿┩	t <mark> </mark>					
	HP8115	Develop Life Cycle costs	31-Mar-09	22-Jun-09	60.0d HP8110	HP8165	291.0d			1 6 il i					1 11/	1					
		.02 Compare Process Efficiencies	25-Nov-08	17-Feb-09	51.04		42.0d		0.01.02 Compa		micleocie				1 11/	1					
	HP8120		26-Nov-08	23-Dec-08	20.0d HP8135	HP8125	42.0d		ncy Calculation						1 11/	1					
	HP8125	Perform Efficiency Calculations	24-Dec-08	20-Jan-09	20.0d HP3120	HP8130	42.0d		clency Calculation		-				1 11/	1					
	HP8130	Compare Process Efficiencies	24-Dec-08	17-Feb-09	20.0d HP3125	HP8230	42.00		nicess Efficience			· <mark>⊦</mark> ···∦·	·}		· <mark>┟</mark> ╍╍┠╋┦	<u> </u>				 	
		.03 Compare Process Robustness	01-Oct-08	17-Mar-09	105.0d		360.0d	C.G.10.20.		re Process	Roberton				/						
	HP8135	Develop 3 Reference Flow sheets	01-Oct-08*	25-Nov-08	40.00	HPS120, HPS140,	22.0d		ference Flow she			T I		1	1 11/						
	nF0135	Develop 5 Relefence Plow sheets	01-00-06	25-1400-06	40.00	HP8145	22.00		ence now she						1 11/	1					
	HP3140	Develop Equipment Lists(3) and Process Lay-outs	26-Nov-08	17-Feb-09	60.0d HP8135	HP8165	380.0d	=EQ Develop Eq	ulpment Lists(3	n Fraces	s Lay-outs	5									
	HP8145	Perform RAMI Study	26-Nov-08	17-Mar-09	80.0d HP8135	HP8165, HP8225	22.0d	Perform R/	AMI Study						1 11/	1					
		.04 H2 Process Selection	05-Jan-09	14-Sep-09	181.0d		291.0d	C.Q.1		2 Process	election	· } ···· } ·	++		┢╍╍┝╋┩	t <mark> </mark>					
	HP8150	Develop Review Team	05-Jan-09*	27-Feb-09	40.0d	HP8155	332.0d	Develop Be	eview Team				!		1 11/	1					
	HP8155	Review Decision Tree Data	02-Mar-09	27-Mar-09	20.0d HP8150	HP3160	332.0d		ecision Tree Data						1 11/	1					
	HP3160	Develop Weighting Criteria	30-Mar-09	24-Apr-09	20.0d HP8155	HP3165	332.0d	- H	Weighting Criter						1 11/	1					
	HP8165	Conduct Formal Review Workshop	23-Jun-09	20-Jul-09	20.0d HP3160, HP31		291.0d		1 1 11	Workshop					1 11/	1					
	nironos	Conduct Formal Review Workshop	25 001105	20.00.00	HP8115, HP81	40	201.00								1 11/	1					
	HP8170	Develop Decision Tree Report	21-Jul-09	17-Aug-09	20.0d HP8165	HP8175	291.0d	Devek	op Decision Tree	Report			††	1	1141	/ <mark> </mark>					
	HP8175	Issue H2 Process Recommendation		17-Aug-09	0.0d HPS170	HPS180	291.0d	🗣 Issue I	H2 Process Rec	nunendatio	n				1 11/	1					
	HP8180	H2 Process Selection		14-Sep-09	0.0d HP8175	HP8235	291.0d	H2 Pr	rocess Selection				!		1 11/	1					
	C.Q.10.20.40.01	.05 Validate TRL 5 for HTSE	01-Oct-08	14-Apr-09	125.0d		2.0d	C.Q.10.20	140.01.06 Valid	68 TEL 5 10	r HTISE				1 11/	1					
	HP8205	Update Flow sheet	01-Oct-08*	23-Dec-08	60.0d	HP8210, HP8215, HP8220	22.0d	Update Flow	sheet												
	HP8210	Update H2A Analysis	24-Dec-08	17-Feb-09	40.0d HP8205	HP8225	42.0d	Update H2A	Analysis				1	1	1						
	HP8215	Validate Cell Durability ((1000 hrs)	01-Oct-08	23-Dec-08	60.0d HP8205	HP8225	82.0d	Validate Cell	Durability ((100	he D					1 11/	1					
	HP8220	Validate Steam Generator Perf. (2500 hrs)	01-Oct-08	17-Mar-09	120.0d HP8205	HP8225	22.0d	Validate St	eam Generator	er I. (2500 I	rs)				1 11/	1					
	HP8225	TRL 5 Validated		14-Apr-09	0.0d HP8220, HP82 HP8580, HP82 HP8145	215, HP8230 210,	2.0d	TRLS Val	lated												
	HP8230	HPS TRL 5 Achieved		14-Apr-09	0.0d HP8225, HP81	30 HP8595, HP8585	2.0d	🔫 HRS TRL	Achieved												
	C.Q.10.20.40.02 H	PS Conceptual Design Report	01-Sep-09	04-Jul-11	480.0d		41.0d	•		10.0.40		1 1	-	Report	[[Ť]						
	HP8235	Conceptual Design Report Preparation	31-Aug-10	20-Dec-10	80.0d HP8315, HP83 HP8355, HP83 HP8395, HP81	375,	41.0d			al Design	tepart Pre	eparator									
	HP3240	Conceptual Cost Estimate	06-Jul-10	20-Dec-10	120.0d HP8235	HP3245	41.0d			al Cast Est	imate			1	1 11/						
	HP3245	Conceptual Design Review	21-Dec-10	14-Feb-11	40.0d HP8235, HP82	40 HP8250	41.0d		Contes	tual Design	Review			1	1 11/						
	HP8250	Independent Review	15-Feb-11	11-Apr-11	40.0d HP3245	HP8255	41.0d		🛛 🖳 Inde	endent Rev	lew			1	1 11/						
	HP8255	Incorporate Review Comments	12-Apr-11	06-Jun-11	40.0d HP8250	HP3260	41.0d	<u>!</u>	i inde	noorate Rei	iew Cam	nients	††	1	1	(
	HP8260	Issue HPS Conceptual Design Report		06-Jun-11	0.0d HP8255	HP8265	41.0d			EIIFS Con			port	1	1 11/						
	HP8265	HPS Conceptual Design Complete		04-Jul-11	0.0d HP3260	PM375, PM220	41.0d		F ♦ Hi	8 Concepts					/						
	C.Q.10.20.40.02	.01 Feed and Utility System Supply	01-Sep-09	30-Aug-10	260.0d		41.0d		C.Q 10.20		ed and Ut			4	1 11/						
	HP8300	Conceptual T&FRs	01-Sep-09*	21-Dec-09	80.0d	HP8305	41.0d		ceptual T&FR					1	1 11/						
	HP8305	Conceptual Studies Analysis	22-Dec-09	10-May-10	100.0d HP8300	HP8310	41.0d	····	Conceptual Sta	dies Analys	iii		·····	1	****	¦ <mark> </mark>				 	
	HP8310	Conceptual Drawings/Models		30-Aug-10	80.0d HP8305	HP8315	41.0d		Conceptuz	Drave ngs/N	odels			1	1 11/						
					~		Page 19 of 55				K filter: A	All Activ	tles			<u> </u>	_			<u> </u>	
e	maining Level of Effe	ort Actual Work	Critical Re	emaining Wo	IN .																

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	Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2	2009 2010	2011	201	12 2	013	2014	201	5 20	16	2017	2018	2019	2020	202	21
HP8315	Conceptual SDDs/Specs	11-May-10	-		HP8310	HP8235	41.0d				Conceptual					L								
	0.02.02 Hydrogen Production Subsystem	01-Sep-09					41.0d			· II	C.Q 10.20	0.02	2 Higdro	pert Pro	duction	Subsyste	e m							
HP8320	Conceptual T&FRs	01-Sep-09*		80.0d		HP8325	41.0d				tual T&FR	Ш.		ll		ļ	4		I					
HP8325	Conceptual Studies Analysis	22-Dec-09	10-May-10		HP8320	HP8330	41.0d				ceptual St													
HP8330	Conceptual Drawings/Models	11-May-10	30-Aug-10		HP8325	HP8335	41.0d				Conceptual	Distant		1 5		!								
HP8335	Conceptual SDDs/Specs	11-May-10			HP8330	HP8235	41.0d			· · ·	Conceptual	800	/Specs			1								
	0.02.03 Product Purification System	01-8ep-09		260.0d			41.0d				C.Q 10.20		3 Pripdu	t Furt	cation S	system								
HP8340	Conceptual T&FRs	01-Sep-09*	21-Dec-09	80.0d		HP8345	41.0d			Concep	tual T&FR			I.I		L			I	_				
HP8345	Conceptual Studies Analysis	22-Dec-09	10-May-10	100.0d	HP8340	HP8350	41.0d			Cor	ceptual St	e e e	nalysis											
HP8350	Conceptual Drawings/Models	11-May-10	30-Aug-10		HP8345	HP8355	41.0d				Contractular	i tek kasik	ngs/Node	s I										
HP8355	Conceptual SDDs/Specs	11-May-10	30-Aug-10	80.0d	HP8350	HP8235	41.0d			. ∰	Conceptual		/Specs											
C.Q.10.20.4	0.02.04 Waste Treatment and Disposal System	01-Sep-09	30-Aug-10	260.0d			41.0d			्रम् र	C.Q 10.20	002	14 Weste	Treatr	ient and	Disposa	System							
HP8360	Conceptual T&FRs	01-Sep-09*	21-Dec-09	80.0d		HP8365	41.0d				tual T&FR					L								
HP8365	Conceptual Studies Analysis	22-Dec-09	10-May-10	100.0d	HP8360	HP8370	41.0d			- Cor	ceptual 8t			177		[I				T	
HP8370	Conceptual Drawings/Models	11-May-10	30-Aug-10	80.0d	HP8365	HP8375	41.0d				Conceptual	Prim	ngs/Node	ls										
HP8375	Conceptual SDDs/Specs	11-May-10	30-Aug-10	80.0d	HP8370	HP8235	41.0d			┊	Conceptual		/Specs			1				1				
C.Q.10.20.4	0.02.05 HPS Instrumentation and Control Syst	01-Sep-09	30-Aug-10	260.0d			41.0d				C.Q 10.20.		л ы∳з⊪	strum	ntation	and Con	roi Syste	h						
HP8380	Conceptual T&FRs	01-Sep-09*	21-Dec-09	80.0d		HP8385	41.0d				tual T&FR													
HP8385	Conceptual Studies Analysis	22-Dec-09	10-May-10	100.0d	HP8380	HP8390	41.0d				ceptual \$5		nalysis	11		†	H	·	+ 					-
HP8390	Conceptual Drawings/Models	11-May-10	30-Aug-10	80.0d	HP8385	HP8395	41.0d				Contential	h i i i	ngs/Node	ls										
HP8395	Conceptual SDDs/Specs	11-May-10	30-Aug-10	80.0d	HP8390	HP8235	41.0d				terminani inter	h Himil				1								
Q.10.20.50 Po	wer Conversion System (PCS)	02-Oct-08	04-Aug-10	465.0d			279.0d		_		0.10.20.9	1.01	CS Conce	rsion 3	vstern ()	CS)								
	1 PCS Conceptual Design Report	02-Oct-08	04-Aug-10	465.0d			279.0d				0 10 20 5		CS Conc	ectual	Design	Report								
PC8070	Conceptual Design Report Preparation	01-Oct-09	20-Jan-10	80.06	PC3120, PC3140, PC3160, PC3180, PC3200, PC3220	PC8080, PC8075	279.0d			Concer	itual Desig	1800	art Prepar	ation										
PC8075	Conceptual Cost Estimate	06-Aug-09	20-Jan-10	120.0d	PC3070	PC3080	279.0d			-Conces	tual Cost	sline	e i											
PC8080	Conceptual Design Review	21-Jan-10	17-Mar-10	40.04	PC8070, PC8075	PC3085	279.0d			- Conc	eptual Desi		view											
PC8085	Independent Review	18-Mar-10	12-May-10		PC8080	PC8090	279.0d				pendentR					!								
PC8090	Incorporate Review Comments	13-May-10	07-Jul-10	40.0d	PC8085	PC3095	279.0d				comorate B	er en	Commen											
PC8095	Issue HPS Conceptual Design Report		07-Jul-10	0.04	PC8090	PC3100	279.0d				ue HPS O		ual Desig	n Repo	đ	†	H	·	+ <mark> </mark>					1
PC8100	PCS Conceptual Design Complete		04-Aug-10	0.0d	PC8095	PM220	279.0d				CS Conce		esign Co											
C.Q.10.20.5	0.01.01 Turbine Generator System	02-Oct-08	30-Sep-09	245.0d			279.0d	-	_	C.Q.10.20	.50,01.01		General		em									
PC8105	Conceptual T&FRs	02-Oct-08	21-Jan-09		PM150	PC8110	279.0d		- -	Conceptual T&FR				F. [**										
PC8110	Conceptual Studies Analysis	22-Jan-09	10-Jun-09		PC8105	PC8115	279.0d			Conceptual S														
PC8115	Conceptual Drawings/Models	11-Jun-09	30-Sep-09		PC8110	PC8120	279.0d				I Drawings		s	<u> </u>		+	4	┝╍╍┝╋╵	+ <mark> </mark>					
PC8120	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09		PC8115	PC8070	279.0d																	
	0.01.02 Main Stream System	02-Oct-08	30-Sep-09	245.0d			279.0d			C.Q.10.20	50.01.02	II.	tream Sy	stem		1								
PC8125	Conceptual T&FRs	02-Oct-08	21-Jan-09		PM150	PC8130	279.0d	-	- c				1-1-1	IT		1								
PC8130	Conceptual Studies Analysis	22-Jan-09	10-Jun-09		PC8125	PC8135	279.0d			Gonceptual S						1				1				
PC8135	Conceptual Drawings/Models	11-Jun-09	30-Sep-09		PC8130	PC8140	279.0d	-	···· - G		I Drawings		s	<u> </u>		+		┝╍╍┝╋	+					-
PC8140	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09		PC8135	PC8070	279.0d				I SDDs/8p	Ш								1				
	0.01.03 Feed Water & Condensate System	02-Oct-08	30-Sep-09	245.0d			279.0d			T			Vater & C	and en	ate avs	em.				1				
PC8145	Conceptual T&FRs	02-Oct-08	21-Jan-09		PM150	PC8150	279.0d			Conceptual TAFR				TT.										
PC8146	Conceptual Studies Analysis	22-Jan-09	10-Jun-09		PC3145	PC8155	279.0d	~	<u>لم</u>		s tudies Anal	Ш				1				1				
PC8155	Conceptual Drawings/Models	11-Jun-09	30-Sep-09		PC8145	PC8160	279.0d	 		Conceptual o		III i i		 −−−		·}		┟╍╍┝╋╵	+ <mark>-</mark>					-
PC8155 PC8160	Conceptual Orawings/Models Conceptual 3DDs/Specs	11-Jun-09	30-Sep-09		PC8150 PC8155	PC8070	279.0d				I SDDs/Ss	Ш°і	~			i				1				
					1.00100						.50.01.04					Conterr.								
	0.01.04 PCS Control & Instrumentation System	02-Oct-08	30-Sep-09	245.0d	-	000.00	279.0d		<u> </u>			1111	ontrol & I	soum	maacin	System								
PC8165	Conceptual T&FRs	02-Oct-08	21-Jan-09		PM150	PC8170	279.0d	=1		Conceptual T&FR										1				
PC8170	Conceptual Studies Analysis	22-Jan-09	10-Jun-09		PC8165	PC8175	279.0d	 		Conceptual S				↓↓			4	┟╌╍┠╁	 				·	
PC8175	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	PC3170	PC8180	279.0d		4	Conceptus	i Diawings	Mede	5			1								_
							Page 20 of 5								I Activit									_

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IIN	LOIV	ATED PLANNING	SCH	DOL	-													9-29	-						
		Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009	2010	2011	2012	20	113 2	2014	2015	2016	20	017	2018	2019	2020	202	21
	PC8180	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d	PC8175	PC8070	279.0d			Conceptua	I SDDs/\$s	संसर ।	+						┱┪			<u> </u>	<u> </u>	_
		.05 PCS Electrical Distribution System	02-Oct-08	30-Sep-09	245.0d			279.0d	│ ─			50.01.05		trical D	Istilbution	System	-								
	PC8185	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	PC8190	279.0d		Conces	tual T&FR	5													
	PC8190	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.04	PC8185	PC8195	279.0d			ncentual St	uties Ada		1		1									
	PC8195	Conceptual Drawings/Models	11-Jun-09	30-Sep-09		PC8190	PC8200	279.0d		TC HT	Conceptua	d Drawinty		·	+		 <mark>- </mark> -		·- + 						
	PC-8200	Conceptual 3DDs/Specs	11-Jun-09	30-Sep-09		PC8195	PC8070	279.0d			Conceptua														
		.05 Turbine Building HVAC	02-Oct-08	30-Sep-09	245.0d			279.0d			C.Q.10.20			Suliding	LUCA C										
	PC8205	Conceptual T&FRs	02-Oct-08	21-Jan-09		PM150	PC8210	279.0d		1			in i	sananny	11/12										
	PC8210	Conceptual Studies Analysis	22-Jan-09	10-Jun-09		PC8205	PC8215	279.0d		i	nceptual St														
	PC8215	Conceptual Drawings/Models	11-Jun-09	30-Sep-09		PC8210	PC8220	279.0d			Conceptua					-			·- ++-·						
	PC8215	Conceptual Drawings/Moders Conceptual SDDs/Specs	11-Jun-09	30-Sep-09		PC8215	PC8220 PC8070	279.0d			- F	i Diawing i SDDs/Sr	Meores.												
							PC8070						T T.	L											
		e of Plant Systems (BOP)	02-Oct-08	07-Jul-10	445.0d			299.0d			1	Q.10.20.6			nt Bysten		II								
		OP Conceptual Design Report	02-Oct-08	07-Jul-10	445.0d			299.0d	_		с.			° Conce	phiai Des	ion Rep	port								
	BOP010	Conceptual Design T&FR	02-Oct-08*	14-Jan-09	75.0d		BOP015	282.0d	9	Concep	itual Desig														
		.01 Conceptual Studies & Alternatives Ana		07-Jul-10	445.0d			299.0d		i	- C.		. on o	concept	ua Studie	es & Alte	ernatives	Analysis							
	BOP015	Site Selection Study	02-Oct-08	18-Mar-09		BOP010	BOP020, BOP040, 3A485	282.0d			election St														
	BOP020	Geo technical Site Investigation	25-Dec-08	29-Apr-09	90.0d	BOP015	BOP025	282.0d	ᇉ	Geo	technical 3	Site Invest	oed or												
	BOP025	Seismicity Review	30-Apr-09	02-Sep-09	90.0d	BOP020	BOP030	282.0d		╘╍╴╴	Belsmicity P	Review													
	BOP030	Probabilistic Seismic Hazards Analysis	30-Apr-09	14-Apr-10	250.0d	BOP025	BOP035	282.0d		-	Prob	abilistic Be	ismici la	zards A	naysis										
	BOP035	Issue Site Selection Study		14-Apr-10	0.0d	BOP030	LR140, SA605	282.0d			- Issue	Ste Seie	ction Stur	ty		- T			- 11						
	BOP040	Conceptual Drawings/MOdels	19-Mar-09	08-Jul-09	80.0d	BOP015	BOP045	299.0d			onceptual D	brawings/W	Φdes												
	BOP045	Conceptual System Design Descriptions (SDDs)/Specs	19-Mar-09	08-Jul-09	80.0d	BOP040	BOP050	299.0d		┍╍	onceptual S	lystem De	ibn Ceso	riptions	(SDDs)/	Specs									
	BOP050	Conceptual Design Report Preparation	09-Jul-09	28-Oct-09	80.0d	BOP045	BOP075, BOP055, BOP060	299.0d		╽┕╕	Conceptu	al Cesign	leopri Pr	eparati	m										
	BOP055	Conceptual Cost Estimate	06-Aug-09	28-Oct-09	60.0d	BOP050	BOP075	479.0d			Conceptu	al Cost Es	inste i												
	BOP060	Conceptual Design Review	29-Oct-09	20-Jan-10	60.0d	BOP050	BOP065	299.0d			Concep	tual Desig	n Review						·- ††-·						
	BOP065	Independent Review	21-Jan-10	14-Apr-10	60.0d	BOP060	BOP070	299.0d				endent R		1											
	BOP070	Conceptual Design Review Comment Incorporation	15-Apr-10	07-Jul-10		BOP065	BOP075	299.0d			- -	inceptual l	es pri Re	view C	omment I	ncorpor	ration								
	BOP075	BOP Conceptual Design Report Complete		07-Jul-10	0.0d	BOP070, BOP050, BOP055	PM220	299.0d			в	OP Conce	dus Cesi	gn Rep	ortComp	ele									
Q 10	.30 Preliminary	Design	16-Feb-11	27-Jan-14	768.0d			2927.0d						-	┝┿┯╋╶	0.10.3	30 Prein	ninary De	sion						
		Analysis Doouments	06-Jul-11	17-Dec-13	640.0d			2955.0d							c	G 10 30	0.14 341	ety Analys	als Dideu	urrents					
_	1560	Criticality Safety Assessment	06-Jul-11	08-Nov-11		PM270	PM310, LR270	650.0d				-	dititat	ty Safet	y Assess				11-						
SA	N565	Safety Analysis	21-Dec-11	17-Dec-13		PM270, SA710, SA578, SA675	LR270, PM310	100.0d				-				al ty Ar	nalysis								
C.(Q.10.30.14.01 Int	ternal Events PRA Model	04-Jul-12	25-8ep-12	60.0d	1		100.0d					III 🦛	c.q.1	0.30.140	1 inter	nal Event	ts PRA M	odel						
	8A570	Finalize Internal Events PRA Model	04-Jul-12	25-Sep-12	60.0d	8A370, 8A605	8A575, 8A580, 8A578	100.0d						Final	ze interna	al Event	s PRA M	odel							
C.(Q.10.30.14.02 Ex	xternal Events PRA Model	26-8ep-12	04-Dec-12	50.0d	1		100.0d		1		+	₩ ₩ ₽₩	- c.c	10.30.14	.02 Ex	ternal Ev	ents PFA	Model						
	8A575	Finalize External Events PRA Model	26-Sep-12	04-Dec-12	50.0d	8A570, 8A605	8A578	100.0d							allae Ekte		ents PRA								
		vent Consequence Analysis	12-Sep-12		60.0d			100.0d						. c.c	10.30 14	LOB EV	ent Cons	equence	Arabsk	5					
	3A578	Finalize Dose analysis, including Thermal and Fluid Flow Analysis		04-Dec-12		8A440, 8A575, 8A570	3A580, 8A565	100.0d							silze Dos	: analys	sis, includ	ling Therr	naland	Fuld F	low Analy	sis			
C.(Q.10.30.14.04 RI	-	05-Dec-12	07-May-13	110.0d			175.0d						÷	C 0.10	30 14 04	4 Risk Ar	natysis							
	3A580	Event Sequence Final Quantification	05-Dec-12			SA570, SA578	3A585, 3A590, 3A625	100.0d					╫╫╌┾└		ent Sequ				-+++-						
	3A585	Risk Integration and Results Interpretation	09-Jan-13	12-Feb-13	25.0d	8A580	8A595, 8A670, 8A625	100.0d						ti a	isk integr	aton an	nd Result	s interpret	ation						
	3A590	Uncertainty and Sensitivity Analysis	09-Jan-13	12-Feb-13	25.0d	8A580	8A625	235.0d						ելս	ncerta nt;	and Se	ensitivity	Analysis							
								Dana Oi of S	-					AOV		alt di'a	_								
emaini	ing Level of Effo	ort Actual Work	Critical R	emaining W	ork			Page 21 of 5	0				П	ASK1	iter: All A	cuvitie	b d								
du al L	evel of Effort	Remaining Work	Start Con	straint																				c) Prima	

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		Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009 2	2010	2011	201	12	2013	2	2014	2019	5	2016	2	017	2018	20	019	2020	20	121
Г	3A595	PRA Preliminary Design Report For Peer Review	13-Feb-13	26-Mar-13	30.0d	8A585	8A690	130.0d					╢╻	- 14	9 PR	A Pieli	minat	/ Desigr	Repo	rt For I	Petr	Review	-				Т	_
F	3A500	Finalize PRA Preliminary Design Report	27-Mar-13	07-May-13	30.0d	SA670	SA690	100.0d							g Fi	nalice i	PRAS	relimina	ry De	sion R/	none						- 11	
-	C.Q.10.30.14.05 D	esign and Licensing Support & Interface	04-Jul-12	11-Jun-13	245.0d			235.0d				·+i	┼┼╂╌╅									Suppo	ort & Inter	face		••••••		
Г	8A605	Design and Site Freeze for Final PRA	04-Jul-12		0.04	8A485, BOP035, NH8730, HT8460	8A570, 8A575	100.0d						De				for Fina			TIT							
F	3A625	Final PRA based LBE's	13-Feb-13	19-Mar-13	25.0d	8A580, 8A590, 8A585	8A630	235.0d							g Fin	5I PRA	ltase	I LBE's										
F	8A630	Final PRA Based Safety Classes	20-Mar-13	02-Apr-13	10.0d	8A625	3A645, 3A650, 3A655, 3A660	235.0d							j Fir	al FRA	(Base	d Safet	Clas	ses								
F	34545	Regulatory Design Criteria	03-Apr-13	07-May-13	25.0d	8A630	3A675	235.0d							HI R	ouato	n De	sign Crit	dia								- 11	
	3A650	SSC Reliability and Capability Requireme	03-Apr-13	07-May-13		8A630	SA675	235.0d		·		·+i	┼┼╂╶┼	+6		BC R I	IN UR	and Ca	abili	v Riegi	it it is a second s							
H	8A555	SSC Special Treatment Regularements	03-Apr-13	07-May-13		8A630	8A675	235.0d										reatmen									- 11	
H	3A660	Risk Confirmation of Defense-in-Depth	03-Apr-13	07-May-13		SA630	SA675	235.0d								1		ion of D									- 11	
	3A670	PRA Independent Review	13-Feb-13			3A585	8A600	100.0d						Ľ.				nt Revie									- 11	
H																											- 11	
L	3A575	Licensing Application PRA Review	08-May-13	11-Jun-13	25.06	8A645, 8A650, 8A655, 8A660	8A565	235.0d								Jcensin		lication		Review								
		eat Transport Failures & Thermal Events	06-Jul-11	17-Dec-13	640.0d			2955.0d				-						30.14.06		t Trans	(port F	alture	s & Then	nal Eve	ents			
	3A580	Validate Relevant Failures Experimentally	06-Jul-11	20-Dec-11	120.0d	SA330, PM270		3475.0d					l Nale	date I	elevar		II i	perimer										
	SA585	Compare Model Results to OP/Accident	06-Jul-11	30-Aug-11		8A330, PM270	3A690	540.0d				-	ion pa	re Mo		sults to	OP/A	coldent	Imits								- 11	
Γ	3A690	Identify Plant Controls for 38 and Transients	08-May-13	16-Jul-13	50.0d	3A685, 3A600, 3A595	8A695, 8A700	100.0d						ľ	*!	ldentfy	y Pian	t Contro	s for 3	38 and	i Treshe	slents						
	3A695	identify Safety Significant components (if relevant)	17-Jul-13	27-Aug-13	30.0d	3A690	8A705, NH8715, HT8445	100.0d								identi T	n) Sat	ety Sign	licant	comp	orents	; (it rei	evant)					
L	3A700	Identify Equip Performance Changes for SS Components	17-Jul-13	24-8ep-13	50.0d	8A690		3015.0d							- H	licent	ti Eq	uip Perf	rmar	ce Ch	anges	for SS	S Compo	nents				
Γ	8A705	Validate Equip Changes for Safety Significance (Experimentally)	28-Aug-13	05-Nov-13	50.0d	8A695	8A710	100.0d								1 /4	ldate i	Equip Cl	ange	s for S	alety (Signific	cance (Ex	operime	entally)			
	SA710	Model Fallures w/ Credit for Equip Changes	06-Nov-13	17-Dec-13	30.0d	SA705	PM310, 8A565	100.0d							- 4			allures v										
С	.Q.10.30.20 Nuclear	Heat Supply System (NHSS)	06-Jul-11	27-Aug-13	560.0d			180.0d				-			-								(NH88)				- 11	
	C.Q.10.30.20.01 N	HSS Preliminary Design	06-Jul-11	27-Aug-13	560.0d			180.0d							-	C.Q.1	10,30	20.01 N	1881	Preilmi	neriy 🗅	es gn					- 11	
Γ	NH8715	Preliminary TFR	14-Feb-12	27-Aug-13	401.0d	PM270, FL80190, 8A695	NH8745	180.0d							7	Preilin	nihary	TFR					-					
	NH8720	Preliminary Design Drawings	06-Jul-11	16-Jan-13	401.0d	PM270	NH8745	339.0d				-			Pieli	ninary i	Desig	n Drawir	gs.								- 11	
	NH8725	Update System Design Descriptions	05-Jul-11	16-Jan-13	401.0d	PM270	NH8735, NH8745, NH8745	219.0d						Ē	Ujida	te Syst	tem D	esign De	script	lons								
	NH8730	50% Review	23-May-12	03-Jul-12	30.0d	SE450, SE435, PM270	NH8735, 8A605	100.0d					147	-90%	Fievie	~												
Г	NH8735	Final Prelim Design Review	17-Jan-13	10-Apr-13	60.0d	NH8725, NH8730	NH3740, NH3745	219.0d						버	Fir	al Prei	In De	sign Re	ew									
	NH8740	Independent Review	11-Apr-13	03-Jul-13	60.0d	NH8735	NH3745	219.0d				+	111		- b	ndepe	nient	Review	1		-111-							
	NH8745	Long-Lead Procurement Specs	12-Apr-12	16-Jan-13	200.0d	NH8725	NH8750, NH8746	219.0d					IH	-	Long	Lead F	Procui	ement S	pecs								- 11	
	NH3746	NH33 Preliminary Design Complete		27-Aug-13	0.0d	NH8745, NH8740, NH8735, NH8725, NH8720, NH8715	PM310	180.0d								- NHBS	B Pre	minary (Design	Comp	:lete							
	C.Q.10.30.20.02 N	HSS Procurement	17-Jan-13	03-Jul-13	120.0d			219.0d						- ÷	+	C.Q.10	.: 0.2	.02 NH	38 Pr	ocuren	nert							
Г	NH8750	Long-Lead Procurement	17-Jan-13	03-Jul-13	120.0d	NH8745	PM310	219.0d						L	- İ	Long-L	end P	.02 NH rocurem	ent									
C		ansport System (HTS)	16-Feb-11		768.0d			72.0d				+								iransp		stem (HTS)				·	
		TS Preliminary Design	16-Feb-11		768.0d			72.0d										30.30.0		8 Prell							- 11	
Г	HT8445	Preliminary TFRs	10-Apr-13	27-Aug-13		PM270, 8A695	HT3480	180.0d							╺╓┿╸	Freilin	ninary		Ι		TIT		1				- 11	
H	HT8450	Preliminary Design Drawings	05-Jul-11	16-Jan-13		PM270, 0,0555	HT3480	339.0d							Pres			n Drawin	05									
	HT8455	Update System Design Descriptions	06-Jul-11	22-Nov-11		PM270	HT8465, HT8475, HT8480	520.0d				-	Upd	ate Sys		esign C			ſ									
	HT8460	50% Review	11-Apr-12	22-May-12	30.0d	PM270	HT8465, 8A605	130.0d				+	ЧЦ.	50%	Review						-+++-							
em	aining Level of Effo	Actual Work	Critical R	emaining Wo	irk.		I	Page 22 of 5	5					TAS	K filte	r: All A	ctiviti	86										
	al Level of Effort	Remaining Work	Start Cor	2										1														

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		Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	20	009 201	10 2	011	2012	20	013	201	4 2	015	201	6	2017	20	18	2019	202	.0	2021	Τ
		Fred Barlin Barlin Barlin	12 4 4 4 2			100000	100.000								Ι.	H L							<u> </u>						Ι
HT	8465	Final Prelim Design Review	12-Aug-13	04-Nov-13	60.08	HT8455, HT8460, HT8725	HT8470	72.0d							Π			nellm De	esign i	Review								1	
HTS	8470	Independent Review	04-Nov-13	27-Jan-14	60.0d	HT3465	HT3480	72.0d								current	Ind	pendent	t Revie	w								1	
HTS	8475	Long-Lead Procurement Specs	16-Feb-11	22-Nov-11	200.0d	HT8455	HT3480	640.0d				- +	<u></u>	ang-Le	ad Pro	curren	ent Sc	ecs										1	
нта	3480	HTS Preliminary Design Complete		27-Jan-14	0.0d	HT8475, HT8470, HT8455, HT8450, HT8445	PM310	72.0d									• нт	Freimi	nary D	iesign	Conuple	te							
C.Q.10	0.30.30.03 H	TS Procurement	10-Oct-11	07-Sep-12	240.0d			24.0d				+			C.Q.1	0.30.3	0.03	ITS Proc	ureme	ent								1	
нта	8490	Pliot Plant Circulator	10-Oct-11	07-Sep-12	240.0d	HT3665	HT3670	24.0d							Plipt	lant C	rculad	or										1	
C.Q.10.3	0.40 Hydrog	en Production System (HPS)	14-Mar-12	30-Jul-13	360.0d			200.0d					1 1	++-				1.40 Hy	droger	1 Prod	ction 8	tystem	(HPS)					1	
C.Q.10	0.30.40.02 H	PS Preliminary Design	14-Mar-12	30-Jul-13	360.0d			200.0d					1 1			- Q.	Q.10.0	1.40.02	невя	Prelimi	an De	sig						1	
HPS	8430	Integrate Pilot Plant w/ Design	14-Mar-12	12-Feb-13	240.0d	PM396	HP8730, PM310	320.0d					-	╘╧═				Plant w/		in I								1	
HPS	8435	Preliminary Design - Vendor	14-Mar-12	30-Jul-13	360.0d	PM396	HP3440	200.0d				+	' t-			Fin	Ilmine	ry Desig	n Ve	ndor	+							t	
HPS	8440	HPS Preliminary Design Complete		30-Jul-13	0.04	HP8435	PM310	200.0d					1		Ģ	HF	SPre	ininary i	Design	Com	iete							1	
C.Q.10.3	0.50 Power	Conversion System (PCS)	16-Feb-11	03-Jul-13	621.0d			219.0d				- +	+		┝━╋			50 Pov		nversi		em PO	C8)					1	
		C8 Preliminary Design	16-Feb-11	03-Jul-13	621.0d			219.0d				- +				- c.c	10.30	.50.01 K	PCB P	relimir	ary De	sign						1	
	8425	Preliminary TFR	06-Jul-11	22-Nov-11	100.0d	PM270	PC3440	390.0d				-	· 🗖 ·	reimin	ату т Н	R												1	
PCS	8430	Preliminary Design Drawings	06-Jul-11	16-Jan-13	401.0d	PM270	PC8445	219.0d				····-‡				elinin	ry De	sign Dra	wings									+	
PCS	8435	Update System Design Descriptions	06-Jul-11	22-Nov-11		PM270	PC8445, PC8455	520.0d						pdate	system	n Desi	n De	criptions	: T									1	
	8440	50% Review	11-Apr-12	22-May-12		PC8425	PC8445	390.0d						q 50														1	
	8445	Final Prelm Design Review	17-Jan-13	10-Apr-13		PC8435, PC8440, PC8430	PC8450	219.0d							7	Finali	helin	Design I	Review	r									
PC	8450	Independent Review	11-Apr-13	03-Jul-13	60.0d	PC8445	PC8456	219.0d							┕╍┫	ի ին	pena	n Revie	w									1	
PCS	8455	Long-Lead Procurement Specs	16-Feb-11	22-Nov-11	200.0d	PC8435	PC8460, PC8456	520.0d					-	ang-Le	ad Pho	curen	eht Sc	ecs										1	
PC	3456	PCS Preliminary Design Complete		03-Jul-13	0.0d	PC8450, PC8455	PM310	219.0d						T 1	14	- PC:	3 Prelli	ninary D)es i gn	Comp	ete							1	
C.Q.10	0.30.50.02 P	C8 Procurement	23-Nov-11	08-May-12	120.0d			520.0d					11 -	C.0	.10.30	1.sp.p.	PCB	Procure	ment									1	
PCS	3460	Long-Lead Procurement	23-Nov-11	08-May-12	120.0d	PC8455	PM310	520.0d						Lor	g Lea	d Frod	ureme											1	
C.Q.10.3	0.60 Balano	of Plant Systems (BOP)	16-Feb-11	16-Jan-13	501.0d			339.0d				- +			- d			Balance				OP.						1	
C.Q.10	0.30.60.01 B	OP Preliminary Design	16-Feb-11	16-Jan-13	501.0d			339.0d							i d	0.10	0.60	BOP	Prelim	inary I	esipe							1	
BOS	P105	Preliminary TFR	06-Jul-11	22-Nov-11	100.0d	PM270	BOP120, BOP136	390.0d				- H	-	reimin		R		1										1	
BOR	P110	Preliminary Design Drawings	06-Jul-11	16-Jan-13	401.0d	PM270	BOP135	339.0d				- H			to Rid	elinin	ry De	sion Dra	wings									1	
BO	P115	Update System Design Descriptions	06-Jul-11	22-Nov-11	100.0d	PM270	BOP125, BOP135, BOP136	520.0d				ŀ	╺═╷	pdate	Byster	n Eest	pr Des	criptions	•										
BOR	P120	50% Review	11-Apr-12	22-May-12	30.0d	BOP105	BOP125	390.0d						50	6 Rev	ev												.	
	P125	Final Prelim Design Review	23-May-12	-		BOP115, BOP120	BOP130	390.0d							Final F	relim i	design	Review										1	
	P130	Independent Review	15-Aug-12			BOP125	BOP136	390.0d						44	Inde	penpe	IN ROV	lesv –										1	
	P135	Long-Lead Procurement Specs	16-Feb-11	22-Nov-11		BOP115	BOP136	640.0d				- 4		ang-Le	ad Pro	curen	ent Sa limine	ecs										1	
BO	P136	BOP Preliminary Design Complete		16-Jan-13	0.04	BOP135, BOP130, BOP115, BOP110, BOP105	PM310	339.0d						`	•	DP Pte	linina	y Desig	n Com	piete									
	Final Desig		28-Apr-14	21-Mar-17	757.0d			2.0d		_				L.L									10 <mark>40</mark> 8		-			L	
		uotion and Fab Support Bidg Final Design	28-Apr-14	12-Oct-15	381.0d			378.0d				T			[]			1	- IC (and Fa	ab Supp	ort Bidg	g Final C	esign	
PE240		Welding Facility Final Design	28-Apr-14	27-Apr-15		PM310	PE245	378.0d					1				+ C	+ -		ing Fa								1	
PE242		Fabrication Facility Final Design	28-Apr-14	27-Apr-15		PM310	PE245	378.0d					1				÷⊂	ŦĒ					Design					1	
PE245		90% Review - Final Design	28-Apr-15	20-Jul-15		PE242, PE240	PE248	378.0d					1					1 *		% Rev		nal De	1					1	
PE248	в	Incorporate Review Comments - Final De	21-Jul-15	12-Oct-15	60.0d	PE245	PE250	378.0d		_		L						<u>-</u>							inal Des			L	
PE250		Issue for Construction - Construction and Fab Support Bidg		12-Oct-15		PE248	PM700, PM710	378.0d				T								issue t	or Con					Fab Sup			
		r Heat Supply System Final Design	28-Apr-14	10-Feb-17	730.0d			29.0d					1	11							1						y Bysten	i Final '	D
		HSS Final Design	28-Apr-14	10-Feb-17	730.0d			29.0d					1	11								C.C.1	0.40.20	0.01 N	HSS Fin	al Desig	an 🛛	1	
NH	8755	Final TFR	03-Feb-15	22-Jun-15	100.04	MTH110, MTH135, MTH150, MTH165, MTH195, PM310	NH8790	338.0d											i in	al TFR									
					_			Page 23 of 5	5					יי. דו	ASK 1	lfer: A	LActo	/tties											_
maining	Level of Effo	ort Actual Work	Critical R	emaining W	ork			age 20 of a	<i></i>					- 10	non II	iver. A	a Actu	11100											

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	Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009	2010	2011	2012	201	3 201	4 2019	5 201	6	2017	2018	2019	20	120	2021
NH3760	Final Design Drawings	28-Apr-14	26-Aug-16	610.0d	PM310	NH8790	29.0d							: : 🛋			Firla	Design	Drawing	15			T
NH8765	Final Construction Specifications	28-Apr-14	26-Aug-16	610.0d	PM310	NH8790	29.0d						F11				Fire	Constru	uction Sp	echicatio	ns		1
NH8770	Procurement Specifications	28-Apr-14	26-Aug-16	610.0d	PM310	NH8790, NH8775,	29.0d							! + 			Free	ureneni	t Specific	ations			
						NH8780																	
NH8775	System Design Descriptions	23-Nov-15	26-Aug-16		NH8770, PM310	NH8790	29.0d												on Desc				
NH3780	Operating Procedures, Manuals & Documentation	23-Nov-15	26-Aug-16	200.04	NH8770, PM310	NH8785, NH8790	29.0d									F	5I]]			s, Manua		umentati	1
NH8785	Final Construction Cost Estimate	25-Apr-16	26-Aug-16	90.0d	NH3780	NH8790	29.0d										- Ira	Constru	uction Co	ost Estima	ste		
NH8790	90% Review	29-Aug-16	18-Nov-16	60.0d	NH8780, NH8785, NH8775, NH8770, NH8765, NH8760, NH8755	NH8795	29.0d									4	1	196 Rævik	ew				
NH8795	Incorporate Review Comments	21-Nov-16	10-Feb-17	60.0d	NH8790	NH3800	29.0d										┕╼╺╈╡	Incorpo	rate Rev	lew Comr	nents		
NH3800	Issue For Construction		10-Feb-17	0.0d	NH8795	PM440	29.0d										4		or Const				
	0.02 NHSS Procurement	28-Apr-14	12-Aug-16	600.0d			159.0d							-						88 Procu	rement		
NH8805	NH88 Procurement	28-Apr-14	12-Aug-16	600.0d	PM310, NH8121	PM500	159.0d							+ 🗖			Г NHS	S Procu	rement				
C.Q.10.40.30	Heat Transport System Final Design	28-Apr-14	10-Feb-17	730.0d			29.0d		1		T	-++						C.C.10.	40.30 H	eat Trans	port Sys	dem Film	i De
C.Q.10.40.3	0.03 HTS Final Design	28-Apr-14	10-Feb-17	730.0d			29.0d							🔫			-++			HTS Fir			
HT8510	Final TFR	28-Apr-14	12-Sep-14	100.0d	FL81630, PM310	HT3545	539.0d							∶ ÷⊂	Final TF	ł			1				
HT8515	Final Design Drawings	28-Apr-14	26-Aug-16	610.0d	PM310	HT8545	29.0d							i ∳ ■			Fina	Design	Drawing	s			
HT8520	Final Construction Specifications	28-Apr-14	26-Aug-16	610.0d	PM310	HT8545	29.0d										Fire	Constru	uction Sp	ecificatio	ns		
HT8525	Procurement Specifications	28-Apr-14	26-Aug-16	610.0d	PM310	HT8545, HT8530, HT8535	29.0d				T		[1]			F	Free		t Specifik				II.
HT8530	System Design Descriptions	23-Nov-15	26-Aug-16	200.0d	HT3525, PM310	HT8545	29.0d									ł	- 20-1	em Desi	ion Desc	riptions			
HT8535	Operating Procedures, Manuals & Documentation	23-Nov-15	26-Aug-16	200.0d	HT3525, PM310	HT8540, HT8545	29.0d									╏╼╼╡	- lae	rating Pr	rocedure	s, Manua	is & Doci	umentati	Joh
HT8540	Final Construction Cost Estimate	25-Apr-16	26-Aug-16	90.04	HT8535	HT3545	29.0d									🚽	- Ina	Constru	uction Co	ost Estima	ate		
HT0545	90% Review	29-Aug-16	18-Nov-16	60.0d	HT8535, HT8540, HT8530, HT8525, HT8520, HT8515, HT8510	HT3550	29.0d										- 90	196 Rævik	ew				
HT3550	Incorporate Review Comments	21-Nov-16	10-Feb-17	60.0d	HT8545	HT3555	29.0d				+	-+-+	+11	<u>†-}</u>				Incorpo	rate Rev	lew Comr	nents		11
HT8555	Issue For Construction		10-Feb-17	0.04	HT3550	PM440	29.0d										4	iss e F	or Const	ruction			
C.Q.10.40.3	0.04 HTS Procurement	28-Apr-14	12-Aug-16	600.0d			159.0d													8 Procure	ment		
HT3560	HTS Procurement	28-Apr-14	12-Aug-16	600.0d	PM310, HT8311	PM500	159.0d							∶ ∔ ⊏			Гнтв	Procure	ment				
C.Q.10.40.40	Hydrogen Production System Final Design	28-Apr-14	21-Mar-17	757.0d			2.0d											C.Q.10	40.40	Hydrogen	Product	lon Syst	an F
C.Q.10.40.4	0.02 Final NGNP-Coupled Design	28-Apr-14	21-Mar-17	757.0d			2.0d						F11					C.Q.10	40.40.0	2 Final N	GNP-Co	Jupled D	/esig
HP3500	Final Design Drawings	28-Apr-14	12-Sep-14	100.0d	PM310	HP8530	539.0d							∶ ÷ ⊏	Final De	ign Drav	ings						
HP3505	Final Construction Specifications	28-Apr-14	26-Aug-16	610.0d	PM310	HP8530	29.0d							│┊ <mark>╎┽</mark> ═╡			, Fira	l Constru	uction Sp	echicatio	ns		
HP3510	Procurement Specifications	28-Apr-14	26-Aug-16	610.0d	PM310	HP3530, HP3515, HP3520	29.0d							¦ † ∎			F noc	urement	t Specifik	ations			
HP8515	System Design Descriptions	23-Nov-15	26-Aug-16	200.0d	HP3510, PM310	HP8530	29.0d												ion Desc				
HP3520	Operating Procedures, Manuals & Documentation	23-Nov-15	26-Aug-16	200.0d	HP3510, PM310	HP8525, HP8530	29.0d						[1]					rating Pr	rocedure	s, Manua	Is & Doci	umentati	þh.
HP3525	Final Construction Cost Estimate	25-Apr-16	26-Aug-16	90.0d	HP3520	HP8530	29.0d									💾	- Ina	Constru	uction Co	ost Estima	ate		
HP8530	90% Review	29-Aug-16	-		HP8520, HP8525, HP8515, HP8510, HP8505, HP8500	HP8535	29.0d										- 90	196 Revie	ew				
HP8535	Incorporate Review Comments	21-Nov-16	10-Feb-17		HP8530	HP8540	29.0d										╘╍┢╡			lew Com	nents		
HP3540	Issue For Construction		10-Feb-17		HP8535	PM440	29.0d				+		 4	 				iss e Fi	ar Const	ruction			4
HP3545	Start Final Design	29-Jul-15			HP3765	HP3550	42.0d									Start Fin		IN	1				
HP3550	Final NGNP- Coupled Design	29-Jul-15	20-Sep-16		HP3545	HP8555	42.0d								=0		Filte			d Design			
HP3555 HP3560	Modify Design Based on TRL 7 Results Complete NGNP-Coupled H2 Design	16-Nov-16	21-Mar-17 21-Mar-17		HP3550, HP3785 HP3555	HP3560 HP3790, PM440	2.0d 2.0d										F		-	Based on IP-Couple			
maining Level	of Effort Actual Work	Critical R	emaining Wo	~~			Page 24 of 5	5				<u></u>	ASK filte	r: All Act	vities	-							-

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	Activity Name	Start	Finish	Planned	Predecessors	Successors	Total Float	2008	2009	2010	2011	2012	2013	2014	201	5 201	e 20	117	2018	2019	2020	202	24
	Proving Hame	Chart	Finan	Duration	Predecessors	Cuccessors	Total Ploat	2000	2005	2010	2011	2012	2013	- 201	201		0 20		2010	2013	2020		
C.Q.10.40.50 P	ower Conversion System Final Design	28-Apr-14	10-Feb-17	730.0d			29.0d						<u>' II</u>								ersion Sys	stem Film	al Des
C.Q.10.40.50	.01 PCS Final Design	28-Apr-14	10-Feb-17	730.0d			29.0d					-+-+	11		++		- c	.0.10.40	50.01 F	CS Final	Design		
PC8465	Final TFR	28-Apr-14	12-Sep-14	100.0d	PM310	PC8500	539.0d							┊┝╍╋	Final TF	ŧ							
PC8470	Final Design Drawings	28-Apr-14	26-Aug-16	610.0d	PM310	PC8500	29.0d										Final C	Design Dr	awings				
PC8475	Final Construction Specifications	28-Apr-14	26-Aug-16	610.0d	PM310	PC8500	29.0d										Final C	Construct	ion Spec	fications	<i>k</i>		
PC3480	Procurement Specifications	28-Apr-14	26-Aug-16	610.0d	PM310	PC8500, PC8485, PC8490	29.0d										F-111	rement S					
PC8485	System Design Descriptions	23-Nov-15	26-Aug-16	200.0d	PC8480, PM310	PC8500	29.0d						11		1		ysten	n Design	Descript	lons			
PC8490	Operating Procedures, Manuals & Documentation	23-Nov-15	26-Aug-16	200.0d	PC8480, PM310	PC8495, PC8500	29.0d										- Operat	ting Proc	edures, f	/lanuais /	& Docum	entation	
PC8495	Final Construction Cost Estimate	25-Apr-16	26-Aug-16	90.0d	PC8490	PC8500	29.0d										- India	Constructi	ion Cost	Estimate	£		
PC8500	90% Review	29-Aug-16	18-Nov-16	60.0d	PC8490, PC8495, PC8485, PC8480, PC8475, PC8470, PC8465	PC8505	29.0d										90%	6 Review					
PC8505	Incorporate Review Comments	21-Nov-16	10-Feb-17	60.0d	PC8500	PC8510	29.0d										- 🖬 🛛 in	corporate	e Review	v Comme	nts		
PC8510	Issue For Construction		10-Feb-17	0.0d	PC8505	PM440	29.0d				-+-!	-+-+-+	11		·†···†···			s.e For (
C.Q.10.40.50	.02 PC8 Procurement	28-Apr-14	09-Nov-16	663.0d			96.0d		1						+		- 62			3 Procure	ment		
PC8515	PCS Procurement	28-Apr-14	09-Nov-16	663.Dd	PM310	PM500	96.0d							l i i i i i i i i i i i i i i i i i i i			- + c =	Frocure	ment				
C.Q.10.40.60 B	alance of Plant & Overall Site Final Design	28-Apr-14	10-Feb-17	730.0d			29.0d								┿┿┿					ince of Pl	iant & Ove	erali Ste	Fina
C.Q.10.40.60	.01 BOP Final Design	28-Apr-14	10-Feb-17	730.0d			29.0d								+		- to	.0.10.40	60.01 B	OP Final	i Design		
BOP140	Final TFR	28-Apr-14	12-Sep-14	100.0d	PM310	BOP180	539.0d				-+	-+-+			Final TF	R	++++						
BOP145	Final Design Drawings	28-Apr-14	26-Aug-16	610.0d	PM310	BOP180	29.0d							l i l e s in			Final C	Design Dr	awings				
BOP150	Final Construction Specifications	28-Apr-14	26-Aug-16		PM310	BOP180	29.0d									- F				fications			
BOP155	Procurement Specifications	28-Apr-14	26-Aug-16	1	PM310	BOP180, BOP160, BOP165	29.0d										Frequi	enent Sj	pecificati	lons			
BOP160	System Design Descriptions	23-Nov-15	26-Aug-16	200.0d	BOP155, PM310	BOP180	29.0d										ysten	n Desion	Descript	lons			
BOP165	Operating Procedures, Manuals & Documentation	23-Nov-15	-		BOP155, PM310	BOP170, BOP180	29.0d				-+	-+-+			11		- ideral	ting Proc	edures, f	(lanuais (& Docum	entation	
80P170 80P180	Final Construction Cost Estimate 90% Review	25-Apr-16 29-Aug-16	26-Aug-16 18-Nov-16		BOP165 BOP165, BOP170, BOP160, BOP155, BOP150, BOP145, BOP140	BOP180 BOP185	29.0d 29.0d											Construct 6 Review	ion Cost	Estimate	ł		
BOP185	Incorporate Review Comments	21-Nov-16	10-Feb-17	60.0d	BOP180	BOP190	29.0d										- 🖬 🛛 in	corporate	e Review	v Comme	nts		
BOP190	Issue For Construction		10-Feb-17	0.0d	BOP185	PM440	29.0d										4	s e For (Construc	tion			
C.Q.10.40.60	.02 BOP Procurement	28-Apr-14	09-Nov-16	663.0d			96.0d				-+	-+-++			++		- ce	10.40.60	.02 BOP	P Procure	ment		
BOP195	BOP Procurement	28-Apr-14	09-Nov-16	663.0d	PM310	PM500	96.0d							╽┊╎┿┎╋			d ∎¢P	rocure					
Q.10.50 NGNE	Research & Development	01-Oct-07	19-Aug-22	3858.0d			692.0d				++			i li 📕							<u>+</u>	━━╋	
C.Q.10.50.01 H	eat Transport Experiments	13-Oct-08	31-Oct-16	2086.0d			2207.0d	-			++				+ +		- c. p.:	10.50.01	Heat Tr	ansport (Experime	nts	
C.Q.10.50.01	.01 Heat Transport Test Conditions	13-Oct-08	07-Oct-11	766.0d			3507.0d	-			┿┿┯╷	0.10.50	01.01.1	leat Trans	ort Test (onditions							
HT8575	Document Candidate IHX/PHX Materials	05-Jan-09"		60.0d		HT3590, HT3580	24.0d		Docu	iment Candid	ate HX/P	HK Mate	lais		1+		<u>+ +</u> +						
HT3580	Document Candidate IHX/PHX Designs	13-Oct-08*	27-Mar-09	1	HT8575	HT8590, HT8585	24.0d			iment Candid				! i 📗									
HT8585	Document Candidate IHX/PHX Fluids	05-Jan-09	27-Mar-09		HT358D	HT3590	24.0d			iment Candid			11										
HT8590	Develop Heat Exchanger Test Plan (Umbrelia)	30-Mar-09			HT3575, HT3580, HT3585	HT3595, HT3600	24.0d		F	Develop H				moreila)									
HT 3595	Validate TRL 5	12-Sep-11	07-Oct-11	20.0d	HT3590, HT3655	HT3662	3507.0d		1			/aldate 1	RL 5										
C.Q.10.50.01	.02 Lab Scale Testing	05-Jan-09	09-Sep-11	700.0d			132.0d					G.10.50		at Scale T	esting		<u>+ +</u>	·-#					
HTS600	Develop Bench Scale Test Plan (Detailed)	22-Jun-09	04-Dec-09		HT3590	HT3605	24.0d			Develop B		e Test Pl		leat)	11								
HT3605	Design Bench Scale Test Rig(s)	07-Dec-09			HTS600	HT3610	24.0d		F		Bench So												
HT8610	Fab Bench Scale Test Rig(s)	29-Mar-10	16-Jul-10		HT3605	HT8615	24.0d		1	Fab													
HT8615	Procure/Fab HX Sections for Testing	29-Mar-10	10-Sep-10		HT3610	HT3620, HT3665	24.00		1		ocure/Fat			estrea									
HT8620	Pressure/Leak Testing		08-Oct-10		HT8615	HT8625	24.0d		·		ressure/L/				++		<u>+</u> ┝┿╂	·- H h-					
									1	<u> </u>		1 1 1 1	- 11	Lili 📕				11 1					
emaining Level	of Effort Actual Work		emaining W				Page 25 of 8	5				TA	SK filte	r: All Activ	ttles								

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		Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009 2010	2011	2012	201	3 20)14	2015	2016	5 20	017	2018	2019	20	20	2021
	HT9625	Cyclic Pressure Testing	11-Oct-10	31-Dec-10	60.0d	HT3620	HT3630	24.0d		L	Cyclic P	Pressure T	esting		╓┰┶		<u> </u>			T				TT-
	HT8630	Flow Testing	03-Jan-11	25-Mar-11	60.0d	HT8625	HT3640, HT3655	24.0d		G.	l low	Testing												
	HT8635	Model Predicted HX Performance (CFD)	05-Jan-09"	11-Sep-09	180.0d		HT3640	424.0d		Model Pred		Performan	e (CBD											
	HT8640	Evaluate Modeled vs. Actual Performance	28-Mar-11	22-Apr-11	20.0d	HT8630, HT8635	HT3645	24.0d			Eva	luate Mode	led va	Actual Pe	forman	ice .								
	HT8645	Revise CFD Model	25-Apr-11	17-Jun-11	40.0d	HT3640	HT3660, HT3695	24.0d			R	vise CFD		+++++	 	+								1
	HT8650	Identify Additional Components for Testing (ie valves)	05-Jan-09*	19-Jun-09	120.0d		HT3655	592.0d		Identify Addition	nal Com	conents fo	Testing	lle Val	es)									
	HT8655	Test Additional Components	28-Mar-11	09-Sep-11	120.00	HT8650, HT8630	HT3710, HT3595	132.0d			┢╞╪	Test Addit	onai Go	moonent										
С		TS Pliot Scale Testing	06-Dec-10	09-Sep-13	720.0d	-		3027.0d						C Q 10	50.01.	аз наз	Pliot Sc	ale Tes	tino					
_	HT3660	Develop Pliot Scale Test Plan (Detailed)	28-Feb-11	12-Aug-11	120.0d	HT3645	HT3675, HT3665	24.0d		-		evelop Pl	pt Scale	Test Pla	(Detai									
	HT3662	Revise/Update Test Plan For Pilot Scale	10-Oct-11	04-Nov-11		HT3595		3507.0d			+F¶≕i	Revise/U	odate T		or Plipt	+		·		•				H
	HT3665	Design Pilot Scale Test Loop	25-Apr-11	07-Oct-11		HT3660, HT3615	HT3490	24.0d			لی ال			TestLo	- I					1				
	HT8570	Fab Pilot Scale Test Loop	23-Apr-12	13-Aug-12		HT3675, HT3490	HT3680, HT3685,	24.0d						Bicale Te										
				is ring is			HT369D					l m	: 11											
	HT8675	Procure/Fab HX Sections for Testing	06-Dec-10	12-Aug-11	180.0d	HTS660	HT3670, HT3680	284.0d		Г г		roours/Fa	ь нх ве	tionstor	Testing									
	HTS580	Pressure/Leak Testing	13-Aug-12	-		HT3675, HT3670	HT3685	24.0d			TL		Pressur	ations for a/Leak To	sting	1				1				
	HT0585	Cyclic Pressure Testing	10-Sep-12			HT3680, HT3670	HTS69D	24.00			++		Colli	Pressur	Testin	±				+				
	HT8690	Flow Testing	03-Dec-12	25-Feb-13		HT3685, HT3670	HT8700, HT8725	24.00					-1	: Pressur w Testing	T	11								
	HT8695	Model Predicted HX Performance (CFD)	20-Jun-11	24-Feb-12		HT8645	HT8700	284.0d				- Norte	Predict	LUL		nce (CFC								
	HTS700	Evaluate Modeled vs. Actual Performance	25-Feb-13	25-Mar-13		HT3690, HT3695	HT8705, HT8730	264.00						osluzis M			al Perfor							
	нт8705	Revise CFD Model	25-Mar-13	20-May-13		HT8700	HT8765, HT8735, HT8735	24.0d						Revise Ci				T						
	HTS710	identify Additional Components for Testing	12-Sep-11	24-Feb-12	120.0d	HT3655	HT8715	132.0d			┈┼┶═╧	licent	il Addi	onal Com	porents	s for Tes	ding							11
_	HT8715	Develop Test Plan for components	27-Feb-12	15-Jun-12	80.0d	HTS710	HTS720	132.0d					ене ор т	est Flan f	e come	ponents	-							
	HTS720	Procure/Fab Components for Testing	18-Jun-12	30-Nov-12	120.0d	HT8715	HT8725	132.0d				- Fil-	Proc			ents for T	resting							
	HT3725	Test Additional Components	25-Feb-13	12-Aug-13		HT3720, HT3690	HT8465, HT8780,	72.0d					┡╞		1	Compo								1
							HT8727						ΙĒ											
	HT8727	Validate TRL 6	12-Aug-13	09-8ep-13	20.06	HT8725	8E405	144.0d			L			Valida	NETRL 6	6								
С	C.Q.10.50.01.04 La	rge Heat Transport Experiments	25-Mar-13	31-Oct-16	940.0d			24.0d			- T		-						.10.50.	01.04 La	arge Heat	Transpo	int Exper	ner
	HT8730	Final Selection of HX Design/Material		25-Mar-13		HTS700	HT8735	64.0d					FI FI	nat Selec	tion of H	IX Desig								
	HT8735	Develop Engr Scale Test Plan (Detailed)		04-Nov-13		HT8705, HT8730, HT8705	HT8740	24.0d							lop Eng		Test Pla	in (Ceta	iled)					
	HT8740	Design Engr Scale Tests	04-Nov-13	27-Jan-14	60.0d	HT8735	HT3745	24.0d							liph Er	ngr Scale	e Tests							
	HT8745	Engr Scale HX Received		27-Jan-14	0.0d	HT3740	HT8750	24.0d						Er Er	er Scal	e HX Re	ceived							
	HT8750	Install HX Sections In CTF	27-Jan-14	24-Mar-14	40.0d	CTF830, HT8745	HT3755	24.0d						1		X Sectio								
	HT8755	Perform CTF Installation Testing	24-Mar-14	21-Apr-14	20.0d	HT3750	HT3760	24.0d						H -	ertorm	CTFIN	stallation	n Testin	٥					
	HT 8760	CTF Testing of HX	21-Apr-14	06-Oct-14	120.0d	HT8755, CTF920, 8E405	HT8770	24.0d							C1	TF Testin	ig of His							
	HT3765	Model Predicted HX Performance (CFD)	25-Mar-13	20-May-13	40.0d	HT8705	HTS770	384.0d					•	liggiel Pre	licied i	HX Perio	rmance	(CFC)		1				
	HTS770	Evaluate Modeled vs. Actual Performance	06-Oct-14	03-Nov-14	20.0d	HT3765, HT3760	HT3775	24.0d							E E					ormanc	e			
	HT3775	IHX Engr-Scale Demo Complete		03-Nov-14	0.0d	HTS770	HT3780	24.0d						T	- 11	LX Engr-	Scale D	em o Co	mulete					1
	HTS780	Identify Additional Components for testing	03-Nov-14	20-Apr-15	120.0d	HT8725, HT8775	HT8785	24.0d								Ident	ity Add	ioral Co	oniponi	ents for t	esting			
	HT8785	Develop Test Plan for Components	20-Apr-15	15-Jun-15	40.0d	HT3780	HT8790	24.0d							5	l Des	relop Te	st Pan	for Co	ponent	s			
	HT8790	Procure/Fab Components for Testing	15-Jun-15	30-Nov-15	120.0d	HT3785	HT3795	24.0d								4 de la constante da la consta	Proc	e/Fab C	Compo	ents for	Testing			
	HT8795	install Components in CTF for Testing	30-Nov-15	16-May-16		HT3790	HTSBOD	24.0d								F					TF for Tes	ting		
	HTSSDD	Test Additional Components	16-May-16	31-Oct-16		HT8795	8E490	24.0d			+	+-+		11-1	 }	+	64				ponents			11
.0	2.10.50.02 HPS Re	cearch and Development	01-Oct-08	15-Nov-16	2105.0d			2195.0d	-		_	_				++	_	60	10.50	02 HPS	Researc	h and De	weippm	t t
		emonstrate integrated Lab Scale Operations		14-Apr-09	125.0d			2.0d		C.Q.10.50.02.01	Demos	trate integ	rated La	a Scale (peratio	ans I		11						II.
~	HP3565	Incorporate H2 Recycle In ILS	01-Oct-08*	09-Dec-08	50.0d		HP3570, HP3575	2.00	à						1					1				
	HP8570	Incorporate Heat Recuperation in ILS	01-Oct-08	09-Dec-08		HP3565	HP8575	2.00		Incorporate Heat Re														
	HP3570 HP3575					HP3565	HP35/5	2.00		Perform Extends			land	++		+				•				
	HP3575 HP3580	Perform Extended Integrated Operations	10-Dec-08	14-Apr-09				2.00		Complete Lab S			0.0112											
	AP350	Complete Lab Scale Demonstration		14-Apr-09	0.08	HP8575	HP8225, HP8695	2.08		Complete Lab S	laie Dem	onse a lon		1811										1
1al×	ining Level of Effo	rt Actual Work	Critical P	emaining Wo	ark.			Page 26 of 5	5			T/	ASK filte	er: All Ac	tivities									
ani.	ining Level of Ello	APPORT AAAAA	CONTRACT IN	emaining We	21 A			-																

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	Activity Name	Start	Finish	Planned	Predecessors	Successors	Total Float	2008	2009	2010	2011	2012	2013	2014	2015	20	16	2017	2018	2019	2020	202
				Duration																	L,	1
	HP3 Studies and Analysis	02-Mar-09	07-Oct-11	680.0d			3527.0d					. 9.10.50			s and Anal	/sis						_ II
	02.01 Develop Water Supply System	15-Apr-09	04-Aug-09	80.0d			282.0d			2.10.50.02.0				Syster								
HP3585	Determine Water Supply Requirements	15-Apr-09	09-Jun-09		HP8230	HP8590	282.0d		P Deter	rmine Wate	r Supply R	tequirem	ents		<u> </u>			I				
HP8590	Incorporate H2O Reqs in Pilot Plant Design		04-Aug-09		HP8585	HP8695	282.0d		- Inco	orporate H2												- 11
	02.02 Develop Flow Distribution Manifold	15-Apr-09	16-Mar-10	240.0d			2.0d			-	50.02.02.0		· 11	istributio n	Vianifold							
HP8595	Design Flow Distribution Manifold	15-Apr-09	29-8ep-09	120.0d	HP8230	HP3600	2.0d		• • ••••••••••••••••••••••••••••••••••	esign Flow	Distributio	n Manifo	u I									
HP3600	Fab Flow Distribution Manifold	30-Sep-09	22-Dec-09	60.0d	HP8595	HP3605	2.0d			Fap Flow (
HP3605	Test (single effects) Flow Distr Manifold	23-Dec-09	16-Mar-10	60.0d	HP3600	HP3690	2.0d		╘╾┓	Test (sir	ngle effect		istr Manif	31d 								
C.Q.10.50.02.0	02.03 SOEC Degradation Mechanisms	02-Mar-09	22-Apr-11	560.0d			3647.0d		-		C.Q.1	0.50 02.0	2.03 808	C Degrad	istion Med	nanisms						
HP3610	Analyze Degradation Mechanisms	30-Mar-09	22-Apr-11	540.0d	HP8630		3647.0d						dation Me									
HP3615	Perform First Set of ten 10X10 Long Term	02-Mar-09*	04-Dec-09	200.0d		HP3620, HP3625,	54.0d		<u> </u>	Perform Fi	inst Set of t	en 10X10	Long Te	mtests								
	tests					HP8635			- N													
HP3620	Perform SOEC Spectroscopy (1st set)	07-Dec-09			HP8615	HP8630	3827.0d		-		SOEC Sp											
HP3625	Perform 2nd Set of ten 10X10 Long Term Tests	07-Dec-09	05-Nov-10	240.0d	HP8615	HP8630	3647.0d				Perform 2n	dSetof	ten 10X10	2.000 Ten	n Tests							
			-				-		····		<u></u>	+ +		ŀ- <u> -</u>	·+		┽╍┠╇	↓				·
HP8630	Perform SOEC Spectroscopy (2nd set)	08-Nov-10			HP3625, HP3620	HP3610	3647.0d						pectrosco	y (2nd se	10							
HP8635	investigate St.Gobain Cell Technology	02-Mar-09			HP3615	HP3640, HP3645	54.0d	1	╶╴╤	Investigate												
HP3640	Perform St.gobain SOEC Long Term Tests	07-Dec-09	-		HP8635	HP3655	54.0d			Perfor	-	III SDEC	- 1	n Test								
HP3645	Investigate NASA Cell Technology	02-Mar-09	04-Dec-09		HP8635	HP3650	54.0d		╸	Investigate	NASA Ce	II Techno	ology									
HP3650	Perform NABA SOEC Long Term Tests	07-Dec-09	21-May-10		HP8645	HP3655	54.0d		····	Perfor	m NASA 8	BOEC Lo	ng Term	244				I				
HP8655	Complete Final SOEC Selection		21-May-10	0.0d	HP8650, HP8640	HP8665, HP8675	54.0d			Comp	ete Final	spec s	election									- 11
	02.04 Develop SOEC Manufacturing Process	14-Sep-09		540.0d			3527.0d					.0.10.50	02.02.04	Develop		nufacturir	ng Phác	255				- 11
HP366D	Evaluate SOEC Manufacturing Processes	14-Sep-09*	28-Jan-11	360.0d		HP3665	3527.0d					SOEC N	(anufactu	ing Proce	ses							- 11
HP3665	Select manufacturer	31-Jan-11	22-Apr-11	60.0d	HP3655, HP3660	HP3670	3527.0d			5	Select	manufac	turer									- 11
HP3670	Demonstrate Process	25-Apr-11	07-Oct-11	120.0d	HP3665		3527.0d			L		emonstr										
C.Q.10.50.02.0	02.05 Optimize SOEC Technology	24-May-10	12-Aug-11	320.0d			54.0d			1	- C.(2,10,50.0	2.02.05	optimize S	DEC Tec	nology	TTT	T				
HP8675	Final 10X10 Stack testing	24-May-10	25-Feb-11	200.0d	HP3655	HP3680	54.0d			╘╺┫	Final 10	X10 Star	x testing									- 11
HP3680	Scale-up Manufacturing Process	24-May-10	25-Feb-11	200.0d	HP3675	HP3685	54.0d					p Manufa		pæss								- 11
HP3685	Fab SOECs for Engineering Scale Demo	28-Feb-11	12-Aug-11	120.0d	HP8680	HP8700	54.0d				Fal	BCEC	for English	eering Sc	ie Demo							- 11
C.Q.10.50.02.03	Large Scale Hydrogen Experiments	17-Mar-10	17-Dec-13	980.0d			100.0d			-				C C 10	50.02.03	Large S	icale Hy	drogen	Experimen	its		- 11
C.Q.10.50.02.0	03.01 Develop Flow Distribution Manifold	17-Mar-10	08-Jun-10	60.0d			2.0d			C.Q.1	10.50.02.0	3.01 Dev	aloo Flow	CROWNER BOOK	on Manifol	1	TTT	T				
HP3690	Incorporate Test Results In Pliot Plant De	17-Mar-10	08-Jun-10	60.0d	HP8605	HP3695	2.0d		L	Incorp	porate Tes	t Results	In Pilot P	art De lig	4							- 11
C.Q.10.50.02.0	03.02 Pliot Plant Demonstration (Pressurized)	01-Sep-10	25-Oct-11	300.0d			2.0d			-		a. 0.50	1.02.03.02	Flipt Pla	t Demons	tration (F	Pressur	zed				- 11
HP3695	Design 200 KW Pilot Plant	01-Sep-10	10-May-11	180.0d	HP3580, HP3690,	HP3700	2.0d				Desig	n 200 KV	V Plict Pla	int i								- 11
					HP8590						П											
HP8700	Construct 200KW Pliot Plant	11-May-11	25-Oct-11		HP3695, HP3685	HP8705	2.0d				- -	Construct	200KW P	lot Plant	.L			L				
	03.03 Operate 200 KW Pilot Plant	26-Oct-11	17-Dec-13	560.0d			100.0d				-			C.C.10	50.02.03	03 Oper	rate 200	KV P	lio: Plant			
HP3705	Test Single Pressurized Module (50kW, 5000 hrs)	26-Oct-11	05-Jun-12	160.0d	HP8700	HP8710, HP8715	2.0d					Te	st Single P	tessunce	d Module (SOKW, SO	000 Mrs					
HP8710	Post Experiment Destructive Testing	06-Jun-12	28-Aug-12	60.0d	HP8705	HP8725	262.0d				1	⊩ •• ∎	ost Expe	ment c e:	structive T	esting						
HP3715	Test Pressurized Multi-Modules (200kW,	06-Jun-12	27-Aug-13	320.0d	HP3705	HP3720, HP3725	2.0d					₩-₩			surized Mi		les (200	kW 10	(,000 hrs)			
	10,000 hrs)																					
HP3720	Post Experiment Destructive Testing	28-Aug-13	19-Nov-13	60.0d	HP8715	HP8725, HP8730	22.0d				1		-0	Plost Ex	(periment i	Destructh	ve Test	ha .				
HP8725	Evaluate O2 Handling, Pressure Vessel/insulation, Distr. Manifold, SOEC Performance	28-Aug-13	17-Dec-13	80.0d	HP8715, HP8720, HP8710	HP8730, HP8735	2.0d						-	e Eva us	e O2 Har	dling, Pr	essure	/escel/	Insulation,	Distr. Mani	floid, SO	C Perk
HP8730	TRL 6 Validated		17-Dec-13	0.0d	HP8725, HP8430, HP8720	PM305	100.0d				1		Ę	tr. 6	Validated							
C.Q.10.50.02.04	Engineering Scale Demonstration	10-Apr-13	15-Nov-16	940.0d			2.0d						_	┊┥╴║				0.10.5	0.02.04 Er	aineerina	Scale De	nons
HP8735	Design 5 MW Engineering Demo	10-Apr-13	11-Mar-14		HP3725	HP3740	2.00				1				an 5 WW	Engineer	L L					
HP8740	Construct 5 MW Engineering Demo	12-Mar-14			HP8735	HP3745	2.00				1				Construct	5 MW E		Ĩ.				
HP3745	Install 5 MW Demo		18-Nov-14		HP8740, CTF830	HP3750	2.00				•+•••••	.+.+			Install :	MW De	E F	T				·
	The state state of the	a7.96g-14	101101-14	60.00	1. 0140, 011030	10,0100	2.00								in a sell s		~					
aining Level of E	ffort Actual Work		emaining We				Page 27 of 5					- 7	OV files	All Activi	ilor							

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	Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	200	19 2	010	2011	2012	2013	2014	4 20	15 201	16	2017	2018	2019	2020	2021
HP375	Test Single Large Scale Module (5 Mw 1MWt)	e, 19-Nov-14	05-May-15	120.0d	HP3745	HP8755, HP8770	2.0d	1			- 1					┥╧╤╕╶	Test Single	Larpe	Bcale N	fodule (5	Mwe, 1MW	/t)	
HP875	5 Post Engr Scale Destructive Testing	06-May-15	28-Jul-15	60.0d	HP8750	HP3760	42.0d	1								╎┝╈	Post Eng	r Scale	Dettru	ctive Tes	ting		
HPS76	Evaluate O2 Handling, Press Vessel/Insulation, Distr. Manifold, SOE		28-Jul-15	60.0d	HP3755	HP3765	42.0d	1								=	Evaluate	O2 Ha	ndiling, i	Piess Ve	ssel/insulat	ion, Distr. Ma	inifeid, SO
HP376	5 TRL 7 Achieved		28-Jul-15	0.0d	HP3760	HP8545	42.0d	1								4	TRL 7 A	nieved					
HPS77	Test Multiple Modules - Plipt (15 MWe	3 06-May-15	31-May-16	280.0d	HP8750	HP8775	2.0d	1					*****					Test M	uitip e N	/dules -	Pliot (15 M	We, 3 MWt)	
HPS77	5 Post-Pilot Destructive Testing	01-Jun-16	23-Aug-16	60.0d	HP3770	HP3780	2.0d	1									- -			estructive			
HPS78	Evaluate O2 Handling, Press Vessel/Insulation, Distr. Manifold	24-Aug-16	15-Nov-16	60.0d	HP3775	HP3785	2.0d	1									-		aluste	O2 Hand	ing, Press	Vessel/insula	dior, Distr.
HPS78	5 TRL 7 Validated		15-Nov-16	0.0d	HP3780	HP8555	2.0d	1						1				= h	RL 7 Va	liciated			
C.Q.10.50.10	Fuels	01-Oct-07	19-Aug-22	3858.0d			692.0d	—					++	1		+	+						
C.Q.10.50	10.01 AGR-1 Irradiation Shakedown Small Coat	er 01-Oct-07	23-Apr-13	1424.0d			271.0d							C.G	10.50.10	0.01 AGP	- Irradiati	ion Sha	tedown	small Co	oater Fuel		
C.Q.10	50.10.01.01 Fuel Development	01-Oct-07	01-Oct-07	0.0d			79.0d	C.Q.10.50	.10.01.0	01 Fuell	Developn	ent					1						
FLS	100 Fuel Fabrication and Development		01-Oct-07	0.0d		FL80105	79.0d	• Fuel Fabri	ication a	and Deve	lopment						1						
C.Q.10	50.10.01.02 Design & Fabrication	01-Oct-07	01-Oct-07	0.0d			79.0d	C.Q.10.50	.10.01.0	02 Desig	n & Fabr	cation					1						
FLS	0105 Design & Fabrication FY03-FY07		01-Oct-07	0.0d	FLS0100	FL80110	79.0d	Design &	Fabricat	tion FY0:	-FY07												
FLS	-		01-Oct-07		FL80105	FL80115	79.0d	Ready to					t-t				1	+					
C.Q.10	50.10.01.03 irradiation	01-Oct-07	17-Aug-09	463.0d			79.0d		_	C.Q.1	0.50.10.0	1.03 Irrad	ation	1			1						
FLS		01-Oct-07	17-Aug-09	490.0d	FL80110	FL80120, FL80117	79.0d	1			Inadiati						1						
FLS		01-Oct-07	17-Aug-09		FL80115	FL80120, FL80550	79.0d	1		-	Data Ar						1						
FLS	-		17-Aug-09		FL80115, FL80117	-	79.0d	5	Ť.			on Comple	te										
C.Q.10	50.10.01.04 PIE & Safety Testing	01-Oct-07	23-Apr-13	1424.0d			271.0d							- c.d	10.50-0	0.01.04 F	IE & Safet	v Testir					
FLS		17-Aug-09			FL80120	FL80145, FL80150, FL80155	271.0d	ī	-	<u>h</u>	GR-1 Co	ol-down				T	1						
FLS	0135 General PIE Planning 03-07		01-Oct-07	0.04		FL80140	530.0d	General P	IE Plan	hind:03-i	7												
FLS	-	ble 01-Oct-07	30-Sep-08		FL80135	FL80150	530.0d	General P	Validat	on of a '	rechnique	to Disass	en ble A	GR-1 Tes	•								
FLS	0145 General PIE Planning & Facility Preps	27-May-08	16-Feb-10	450.0d	FL80130	FL30160	301.0d			╘╧╧╼┥	Seneral P	E Plannin	o & Facil	ty Preps									
FLS		17-Aug-09		131.0d	FL80130, FL80140	FL80160	301.0d				IE Plann	E Plannir Ing for AG	R-1										
FLS			30-Mar-10		FL80130	FL80160	271.0d					n Receipt											
FLS		30-Mar-10	09-Nov-10	160.0d	FL80155, FL80145, FL80150	FL80165, FL80175, FL80885	271.0d	ī				psule Dis			tion								
FLS	0165 Safety Testing	25-May-10	09-Oct-12	620.0d	FL80160	FL80170, FL80185	271.0d	i i		: 4				arety Tes	sting								
FLS	0170 Fuel Characterization	25-May-10	01-Feb-11	180.0d	FL80165	FL80185	711.0d			4		Fuel Char	acterizati	on i									
FLS		20-Jul-10	31-Aug-10		FL80160	FL80180	661.0d			! <u></u>		L Receipt					1		· <mark> </mark>				
FLS			12-Apr-11		FL80175	FL80185	661.0d						atety Tes				1						
FLS		-	23-Apr-13		FL80180, FL80170, FL80165		271.0d	ī							I PIE Pe	port AGR	-1						
FLS	0190 AGR-1 PIE Complete		23-Apr-13	0.04	FL80185	FL80922, NH8715	271.0d			i				AGR	-I PIE C	Complete	1						
	10.02 AGR-2 Irradiation Pilot Scale Coater Fuel	Pe 01-Oct-07	04-Sep-15	2043.0d			2507.0d			<u> </u>			┝╺┝╼╼╼┥		- il	-	C.Q.10	.50.° C.0	12 A GR	8-2 Irradia	tion Pilot S	cale Coaler i	Fuel Perfor
C.Q.10	50.10.02.01 Fuel Fabrication	01-Oct-07	26-Jun-09	428.0d			3306.0d			C.Q.10	50.10.02	01 Fuel P	abricatio	<u>-</u> -									
FLS	200 Upgrade and Composite Existing NUC 425um Kernels	0 02-Jan-08*	25-Mar-08	60.0d		FL80205	78.0d		ade and					ernels									
FLS	1205 Restart Kernel Fab Line	21-Jan-08*	28-Mar-08	50.0d	FL80200	FL80210	75.0d	CI Rest	art Kenn	el Fab L	ne						1						
FLS	1210 Fab UCO 425 um Kernels (10kg)	31-Mar-08	30-May-08	45.0d	FL80205	FL80212, FL80214,	75.0d					Okg)					1						
FLB		25 02-Jun-08	19-Jun-08	14.0d	FL80210	FL80230 FL80230	75.0d		end, Up	grace &	Characte	rize UO2 4	25 um K	ernels (10	18g)								
	um Kernels (10kg)							I					L.L										
FLS		05-Jun-08	19-Aug-08		FL80210	FL80216	116.0d			i	Kernels						1						
FLS	um Kernels (10kg)	-	08-Sep-08		FL80214	FL80249	116.0d	1-			& Charac	terize UO	2 500 um	Kernels	(10kg)								
FLS	220 AGR-2 Fuel Spec	01-Oct-07	30-Apr-08	153.0d		FL80230	111.0d	AG	R-2 Fue	Spec							1						
maining Lev	el of Effort Actual Work	Critical R	emaining We	ark		F	Page 28 of :	55					TAS	K filter: /	Ali Activ	/Itles							

NGNP INTEGRATED SCHEDULE DEVELOPMENT PLAN

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NGNP INTEGRATED PLANNING SCHEDULE 9-29-2008 Activity ID 2008 2009 2012 2013 2014 2015 2019 2020 2022 2 Activity Name Finish Planned redecessors Successors Total Float 2010 2011 2016 2017 2018 2021 Duration FL80225 UCO 425 um Coating Development and 01-Oct-07 15-Aug-08 230.0d FL80230, FL80249 34.0d Coating Deve and Qualificatio Qualification Tests 10.0d FL80220, FL80225, FL80235, FL80245, FL80230 Fab UCO 425 um Particles (baseline. 18-Aug-08 29-Aug-08 34.0d FabluCD 425 um Particles (baseline FL80210, FL80212 FL80249 varianti FL80235 Characterize UCO 425 um particles 25-Aug-08 26-Sep-08 25.0d FL80230 FL80240 3387.0d Characterize UCO 425 um particles (baselin - 9 (baseline) FL80240 Package & Ship UCO Baseline Particles to 25-Sep-08 30-Sep-08 4.0d FL80235 FL80285 3387.0d Package & Ship UCO Baseline Particles to ORNL ORNL FL80245 Characterize UCO 425 um Particles 01-Sep-08 26-Sep-08 20.0d FL80230 FL80247 79.0d **₽**¶ Character e UCO 425 un Particles (variant 1) (variant 1) EL80247 Package & Ship UCO Variant Particles to... 25-Sep-08 30-Sep-08 4.0d FL80245 FL80290 79.0d Package & Ship UCO Variant Particles to ORNL ____ຍຸວຣ 500 um Coating Development FL80249 88.0d FL80225, FL80230, FL80251 34.0d UO2 500 um Coatino Development 01-Sep-08 31-Dec-08 FL80216 Fat: UO2 500 um Particles FL80251 Fab UO2 500 um Particles 02-Jan-09 16-Jan-09 11.0d FL80249 FL80253 34.0d Characterize UO2 500 um Particles Characterize UO2 500 um Particles Characterize UO2 Particles to ORNL FL80253 Characterize UO2 500 um Particles 19-Jan-09 13-Feb-09 20.0d FL80251 FL80255 34.0d FL80255 Package & Ship UO2 Particles to ORNL 12-Feb-09 24-Feb-09 9.0d FL80253 FL80305 34.0d FL80258 425 um Kernel Compact Process 01-Oct-07 28-Dec-07 65.0d FL80260 141.0d 1 Cerr Compact Process Development & Qualification rosi. 47 Development & Qualification (ORNL) FL80260 500 um Kernel Compact Development & 31-Dec-07 26-Sep-08 195.0d FL80258 FL80305 141.0d 500 uni Kernel Compact Development & Process Qui Process Quals (ORNL) PBMR. Particle Characterization FL80270 44.0d FBMR FL80265 02-Jan-09" 21-Jan-09 14.0d P Particle Characterization FL80270 Compact Fabrication of PBMR Compacts 22-Jan-09 06-May-09 75.0d FL80265 FL80275 44.0d 40 Compact Fabrication of PBMR Compacts (ORNU) (ORNL) FL80275 Complete Data Package of PBMR 07-May-09 15-May-09 7.0d FLS0270 FL80280 44.0d plete Data Package of PBMR Compacts Compacts (ORNL) FL80280 PBMR Data Package Complete 15-May-09 0.0d FL80275 FL80320, FL80317 44.0d PBMR Data Package Complet 📺 Fab & Characterize UCO Base ine Compacts (OF FL80285 Fab & Characterize UCO Baseline 01-Oct-08 18-Feb-09 101.0d FL80240 FL80295 3387.0d Compacts (ORNL) 17-Dec-08" 25-Mar-09 71.0d FL80247 FL80305 24.0d Fab & Characterize UCO Variant 1 Compacts (DFNL) FL80290 Fab & Characterize UCO Variant 1 Compacts (ORNL) Complete UCO Compact Data Packages (ORNL) FL80295 19-Feb-09 05-Mar-09 11.0d FLS0285 FL80300 3387.0d ete UCO Compact Data Packages (ORN 3387.0d FL80300 UCO Compact Data Packages Complete 05-Mar-09 0.0d FL80295 FL80317 -t I JCO Compact Data Packages Comple FL80305 Fab & Characterize UO2 Compacts (ORNL) 11-Mar-09 29-May-09 58.0d FLS0260, FLS0255, FLS0310, FLS0320 24.0d Fab & Characterize UO2 Compacts (DRNL) FL80290 Complete UO2 Data Package 10.0d FLS0305 FL80310 Complete UO2 Data Package 01-Jun-09 12-Jun-09 FL80315 24.0d 🕈 UO2 Data Package Complete 0.0d FLS0310 FL80320, FL80317 FL80315 UO2 Data Package Complete 12-Jun-09 24.00 0.0d FL80315, FL80300, FL80855 FL80317 AGR-2 Fuel Compact Data Package 12-Jun-09 3316.0d AGR-2 Fuel Compact Data Package Comp FL80280 Complete 10.0d FL80305, FL80315, FL80340 Package and Ship AGR-2 Compacts (ORNL) FL80320 Package and Ship AGR-2 Compacts 15-Jun-09 26-Jun-09 24.0d (ORNL) FL80280 C.Q.10.50.10.02.02 Design & Assembly 05-May-08 30-Oct-09 363.0d C.Q.10.50.10.02.02 Design & Assembly 24.0d Experiment Design FL80325 05-May-08" 30-Jan-09 195.0d FL80330 24.0d Experiment Design $\overline{\alpha}$ Design Review Com FL80330 30-Jan-09 0.0d FL80325 FL80335 24.00 Design Review Comments ents 24.04 FL80335 Fabricate Test Train Components 02-Feb-09 26-Jup-09 105.0d EL80330 EL 80340 Fabricate Test Train Com Assemble Test Train 90.0d FL80335, FL80320 FL80345 24.0d FL80340 Assemble Test Train 29-Jun-09 30-Oct-09 AGR-2 Ready To Insert FL80345 AGR-2 Ready To Insert 30-Oct-09 0.0d FLS0340 FL80350, FL80855 24.0d C.Q.10.50.10.02.03 Tadiation AGR-2 Irradiation (West B) 24.0d C.Q.10.50.10.02.03 Irradiation 02-Nov-09 27-Apr-12 650.0d 650.0d FL80345, FL80120 FL80360, FL80355, FL80350 AGR-2 Imadiation (West B) 02-Nov-09 27-Apr-12 24.00 FL80972 FL80360 24.0d FL80355 AGR-2 Data Analysis 02-Nov-09 27-Apr-12 650.0d FL80350 AGR 2 Data Ar 0.0d FL80350, FL80355 FL80365, FL80922. FL80360 AGR-2 Irradiation Complete 24.0d AGR 2 Irradiation Complete 27-Apr-12 FL80892, PM310, FL80480, LR270 C.Q.10.50.10.02.04 PIE & Safety Testing 30-Apr-12 04-Sep-15 875.0d 2507.0d C.Q.10.50. Q.02.0 PIE & Safety Testing Page 29 of 55 TASK filter: All Activities Remaining Level of Effort Actual Work Critical Remaining Work Actual Level of Effort Remaining Work 🗅 Start Constraint (c) Primavera Systems, Inc

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	1 4 - 40 - 51		Flatab																	2010			
	Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009	20	10	2011	2012	2013	2014	2019	5 2016	20	917	2018	2019	2020) 2
FL80365	AGR-2 Cool-down	30-Apr-12	02-Nov-12	135.0d	FL80360	FL80370, FL80375	434.0d								cel-down	1							
FL80370	AGR-2 PIE Planning	30-Apr-12	02-Nov-12	135.0d	FL80365	FL80375	434.0d		+-1-			1	1	AGR-2 P	IE Plani	ing	1	-111					
FL80375	AGR-2 Test Train Receipt & Inspection	05-Nov-12	30-Nov-12	20.0d	FL80365, FL80370	FL80380	434.0d							AGR-2	Test Tirpir	n Receipt &	Inspection						1
FL80380	AGR-2 Capsule Disassembly & Inspection	03-Dec-12	12-Jul-13	160.0d	FL80375	FL80385, FL80395, FL80892	434.0d								GR-2 Ca	psule Disa	sembly & I	nspectik	•				
FL80385	AGR-2 Safety Testing	28-Jan-13	12-Jun-15	620.0d	FL80380	FL80390, FL80410	434.0d							╢────			GR-2 Safe	ty Testi	in i				1
FL80390	AGR-2 Fuel Characterization	28-Jan-13	04-Oct-13	180.0d	FL80385	FLS0410	874.0d						(Ŧi			cterization						
FL80395	AGR-2 ORNL Receipt Inspection	25-Mar-13	19-Apr-13	20.0d	FL80380	FLS0400, FLS0410	834.0d		+-1-				++++	AG	2 ORNI	L Receipt I	spection	-+++					
FL80400	AGR-2 ORNL Safety Testing	22-Apr-13	29-Nov-13	160.0d	FL80395	FL80405, FL80410	834.0d	1						-	AGR-2	DRNL St	ety Testing						
FL80405	AGR-2 ORNL Fuel Characterization	20-May-13	29-Nov-13	140.0d	FLS0400		2967.0d									DRNL FU							
FL80410	AGR-2 Prepare Reports	15-Jun-15	04-Sep-15	60.0d	FL80400, FL80395, FL80390, FL80385	FL80415	434.0d									╎╘╒	AGR-2 Pr	epare P	Reports				
FL80415	AGR-2 PIE Complete		04-Sep-15	0.04	FLS0410	FL80940, LR320	434.0d	1									AGR-2 PI	E Comp	plete				
Q.10.50.10.03	AGR-3/-4 Irradiation Fission Product Transp	01-Oct-07	29-Jun-15	1993.0d			1741.0d									, , , , , , , , , , , , , , , , , , , 	C.Q.10.50.1	0 40 1	(GR-3/-4	i imadiatio	n Fission	Produc	Tre
C.Q.10.50.10.0	3.01 Fuel Fabrication	01-Oct-07	14-Jul-09	440.0d			3294.0d			C.Q.10.5	50.10.03	01 Fuel	Fabrica	ian 🛛									1
FL80425	Fabricate Kernels (350 um fuel)		01-Oct-07	0.04	1	FL80430	358.0d	Fabricate H	ernels (3	350 um 1	(uel)												1
FL80430	Fabricate/Characterize Particles (driver fu	1	01-Oct-07	0.0d	FL80425	FL80435	358.0d	Fabricate/C	haracter	rize Part	icles (dr	iver fuel)				1	I						1
FL80435	Fabricate/Characterize DTF Particles (O	15-Apr-08*	30-Oct-08	143.0d	FL80430	FL80440	217.0d	1. Marca 1.				OTF Part		INL)									L
FL80440	AGR-3/-4 Compact Process Development	31-Oct-08	31-Mar-09	108.0d	FL80435	FL80445	217.0d		A91	R-8/-4 C	ompact	Process	Cevelop	ment		T	1	-111					
FL80445	Fabricate/Characterize Compacts (ORNL)	01-Apr-09	30-Jun-09	65.0d	FLS0440	FL80450, FL80447	217.0d		┗━┫╞			terize Co		(ORNL)									1
FL80447	AGR-3/-4 Fuel Compact Data Package Complete		30-Jun-09	0.0d	FL80445	FL80862	3304.0d		114			-	lata Pac	kage Com	plete								
FL80450	Ship Compacts to INL	01-Jul-09	14-Jul-09	10.0d	FL80445	FL80470	217.0d		եիզի շ	Ship Cor	npacts (o INL				1							1
C.Q.10.50.10.0	3.02 Design & Assembly	02-Mar-09	13-Aug-10	380.0d	1		34.0d		+++		C.Q.	10.50.10	C3.02 C	esign & A	sembly	1							I.
FL80455	AGR-3/-4 Design	02-Mar-09*	29-Jan-10	240.0d	1	FL80460, FL80575	34.0d		0	AG	IR-3/-4	Design	++++-					-+++					
FL80460	AGR-3/-4 Design Complete		29-Jan-10	0.04	FL80455	FL80465	34.0d			A A	9R-3/-4	Design C	omplete	!		1							
FL80465	AGR-3/-4 Fabrication of Test Train Components	01-Feb-10	16-Jul-10	120.0d	FL80460	FL80470	34.0d			F		3/-4 Fabr	ication o	f Test Tra	n Compo	nents							
FL80470	AGR-3/-4 Test Train Assembly	29-Mar-10	13-Aug-10	100.0d	FL80465, FL80450	FL80475	34.0d			+	AGR	-3/-4 Tes	t Train A	ssembly		1							1
FL80475	AGR-3/-4 Ready To Insert		13-Aug-10	0.0d	FL80470	FL80480, FL80862, FL80481	34.0d				AGR	-3/-4 Rea	idy ⁺ d Ir	sert									
C.Q.10.50.10.0	3.03 Irradiation	30-Aug-10	26-Mar-12	410.0d	1		24.0d		+-1-	†11i	-		C.Q.	10.50.10.0	3.03 in a	diation		-+++					(
FL80480	AGR 3 Irradiation (NEFT)	30-Aug-10	26-Mar-12	410.0d	FL80475, FL80360	FL80490, FL80485, FL81000, FL80481	. 24.0d				-	1	- WR	3 Irradiati	n (NEFT	0							
FL80481	AGR 4 Irradiation (NEFT)	15-Aug-11	26-Mar-12	160.0d	FL80475, FL80480	FLS0490, FLS1000	24.0d						W OR	4 Irradiati	IN (NEFT	0	I						r.
FL80485	AGR-3/-4 Data Analysis	30-Aug-10	26-Mar-12	410.0d	FL30480	FL80490	24.0d						AGR	-3-4 Data	Analysis								
FL80490	AGR-3/-4 Irradiation Complete		26-Mar-12	0.04	FL80480, FL80485, FL80481	FL80495, FL80595, FL80900	24.0d						• AGR	-3/-4 Irrad	ation Cion	nolete							
C.Q.10.50.10.0	3.04 PIE & Safety Testing	26-Mar-12	29-Jun-15	850.0d			1444.0d			T11-		T					C.Q.10.50.1	0.0304	4 PIE &	Safety Te	sting		
FL80495	AGR-3/-4 Cool-down	26-Mar-12			FLS0490	FL80500, FL80505	454.0d							AGR-3/-4	Cool dow	4	I						
FL80500	AGR-3/-4 PIE Planning	26-Mar-12	24-8ep-12		FL80495	FL80505	454.0d							AGR-3/-4	1 11	-							1
FL80505	AGR-3/-4 Test Train Receipt & Inspection	24-Sep-12	22-Oct-12		FL80495, FL80500	FL80510	454.0d						臣		1 11		& Inspection						
FL80510	AGR-3/-4 Capsule Disassembly & Inspection	22-Oct-12	06-May-13	140.0d	FL80505	FL80515, FL80525, FL80900	454.0d							AG	R-3/-4 Ca	spsule Disa	ssembly & I	inspect	lice				
FL80515	AGR-3/-4 Safety Testing	17-Dec-12	04-May-15	620.0d	FL80510	FL80520, FL80540, FL81040	454.0d		11	T1-1-			TF				9R-3/-4 Saf	ety Tes	sting				
FL80520	AGR-3/-4 Fuel Characterization	17-Dec-12	26-Aug-13	180.0d	FL80515	FL80540, FL81005	894.0d						+		AGR-37-4	Fuel Cha	acterization						1
FL80525	AGR-3/-4 ORNL Receipt inspection	11-Feb-13	11-Mar-13	20.0d	FL80510	FL80530, FL80540	854.0d								3-4 ORM	N. Receipt	Inspection						
FL80530	AGR-3/-4 ORNL Safety Testing	11-Mar-13	21-Oct-13	160.0d	FL80525	FL80535, FL80540, FL81015, FL81050	854.0d							┢╋	AGR 3/	4 ORNL 8	afety Testin	•					
FL80535	AGR-3/-4 ORNL Fuel Characterization	08-Apr-13	21-Oct-13	140.0d	FL80530	FL81030	1884.0d								NGR 3/		uel Charact						1
FL80540	A/3R-3/-4 Prepare Reports	04-May-15	29-Jun-15	40.0d	FL80530, FL80525, FL80520, FL80515	FL80545	454.0d										NGR-3/-4 P	repare i	Reports				
				- 1			Page 30 of 8	55					Π.4	SK filter:	All Activ	ttes							_
ng Level of E	ffort Actual Work	Critical R	emaining Wo	rk –			age ou or o									11/20							

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	Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009	2	10	2011	2	012	201	3	2014	20	015	2016	21	017	2018	8 3	2019	2020	20	021	
FL805	45 AGR-3/-4 PIE Complete		29-Jun-15	0.0d	FL80540, FL81540, FL81570, FL81595	FL80980, FL80940, PE175, LR320	454.0d			Π			Т					╵╵╞	h G	R-3/-4 P	<u>e ¢or</u>	<u>ipete</u>							
C.Q.10.50.1	0.04 AGR-5/-6 Imadiation Fuel Qualification	17-Aug-09	20-Feb-17	1960.0d			1506.0d		- I i				-		┝┼┥		-		-			2. <mark>0</mark> .10	3.50.10.0	04 AG	R-5/-6 Ir	irradiatio	n Fuel	Qualific	i
C.Q.10.5	0.10.04.01 Fuel Fabrication	17-Aug-09	23-Nov-10	331.0d			2940.0d		- I †		—	C Q.10.	.50.10.	4,01	Fuel F	abrica	rtion									- I		i i	
FL805	50 Develop AGR-5/-6 Fuel Spec (from AGR-1 data)	17-Aug-09	09-Nov-09	60.0d	FL80117	FL80555	283.0d		└╺╞		elop A	GR 5/-6	Fuel S	er o	om AG	3R-1 d	lates)												
FLSOS	55 Fabricate/Characterize Kernels (5,6,7,8)	09-Nov-09	01-Feb-10	60.0d	FL80550	FL80560	283.0d			1 1-1	abrical	e/Chara	cterize	tim	s (5,6	7.81		┝╍╪╞╴			-+++-							(,
FL805		01-Feb-10	16-Aug-10		FL80555	FL80565	283.0d			HP 1		sbridate/			Partici		.7.8)									- I		i i	
FL805		16-Aug-10			FL80560	FL80570, FL80567	283.0d				-		te/Char	arter i	e AGR		Compa	cts								- I		i i	
FL805	67 AGR-5/-6 Fuel Compact Data Package		09-Nov-10		FL80565	FL80870	2950.0d				i i∓•		-6 Fuel	Gem	act Da	ta Par	kage (te									i i	
	Complete					FL80585																						i i	
FL805		09-Nov-10			FL80565	FL80585	283.0d			+	<u> </u>	Ship Co	mpact	1 10 1	t			<u> </u>			-+++-								
	0.10.04.02 Design & Assembly	01-Feb-10	-	420.0d			164.0d					i ; *	° G.G.1	450.		2 Des	ign & /	ssem	bly							- I		i i	
FLSOS		01-Feb-10			FL80455	FL30580, FL30680	164.0d			49	AG	9R-9-6 E		11 1	esign											- I		i i	
FLSOS		-	06-May-11		FL80575	FL80585, FL80670	164.0d					Fa		MGR	6/-6 Ci	oniper	ents						1			- I	(i	
FLSOS		09-May-11			FL80580, FL80570	FL80590	164.0d					**	AGR	1 F T	est Tra	iniAss	emply									- I	(i -	
FL805			09-Sep-11		FL80585	FL80595, FL80870	164.0d						AGR	111	sady T		rt	L.LL]		_
	0.10.04.03 Irradiation	26-Mar-12		410.0d			24.0d									e.	Q.10.5			rradiatio	٦Щ							1	
FL805	95 AGR-5/-6 irradiation (NEFT)	26-Mar-12	21-Oct-13	410.0d	FL30490, FL30590	FL80605, FL80600, FL81075	24.0d						H			■ †	orus/4	i Iradi	ation (NEFT)								l l	
FLSOG	00 AGR-5/-6 Data Analysis	26-Mar-12	21-Oct-13	410.0d	FL80595	FL80605	24.0d									. /	эл, 5/ч									- I		i i	
FLSO	05 AGR-5/-6 Irradiation Complete		21-Oct-13	0.0d	FL80595, FL80600	FL80615, FL80705, FL80908, FL80706	24.0d									╺╸∦	an su	i Iradi	ation (Complete	:							l l	
C.Q.10.5	0.10.04.04 PIE & Safety Testing	21-Oct-13	20-Feb-17	870.0d			1506.0d											┝┼┼	+			3. <mark>0</mark> .10	1. 5 0.10.0	04.04	PIE & S	Jafety Tr	esting	i	
FLSOS	15 AGR-5/-6 Cool-down	21-Oct-13	21-Apr-14	130.0d	FL80605	FL80620, FL80625	24.0d					+++	1-+-	#1-+	t	-		R-5/6	Cool-c	down	-111-							[ľ
FLSO	20 AGR-5/-6 PIE Planning	21-Oct-13	21-Apr-14	130.0d	FL80615	FL80625	24.0d										40	R-5/-6	PIE PI	lanning						- I		i i	
FLSOS	25 AGR-5/-6 Test Train Receipt & Inspection	21-Apr-14	19-May-14	20.0d	FL80615, FL80620	FL80630	24.0d										A.	R-S-6	Test"	Train Re	cellet 8	i l e spe	ection			- I		i i	
FLSOG	30 AGR-5/-6 Capsule Disassembly & Inspection	19-May-14	01-Dec-14	140.0d	FL30625	FL80635, FL80645, FL80908	24.0d											• AG	R-9/-6	Capsule	0685	sembi;	ly & Insp	pection				l l	
FLSO	35 AGR-5/-6 Safety Testing	14-Jul-14	28-Nov-16	620.0d	FL80630	FL80640, FL80660, FL81115	24.0d										-		+		4 9	R-6/-6	5 Safety '	Testin	9			1	
FL806	40 AGR-5/-6 Fuel Characterization	14-Jul-14	23-Mar-15	180.0d	FL80635	FL80660, FL81080	464.0d					+++		#1-+	-·		- ill		AGR-9	5/46 Fuel	dhafa	scieriza	ation						•
FL806	45 AGR-5/-6 ORNL Receipt Inspection	08-Sep-14	06-Oct-14	20.0d	FL80630	FL80650, FL80660	424.0d										14-0	AGR	5/ 5 C	RNLF	celot i	nspect	tion			- I		i i	
FLSO	50 AGR-5/-6 ORNL Safety Testing	05-Oct-14	18-May-15	160.0d	FL30545	FL80655, FL80660, FL81090	424.0d													-5/-6 CR								1	
FLSOS	55 AGR-5/-6 ORNL Fuel Characterization	03-Nov-14	18-May-15	140.0d	FL30650	FL81105	1966.0d											ЬHЬ	A BR	-5/-6 08	NURU	eliCha	aracteriza	ation		- I		i i	
FLSOS	60 AGR-5/-6 Prepare Reports	28-Nov-16	20-Feb-17	60.0d	FL80650, FL80645,	FL80665	24.0d										Шг	ПТ			1	AGR-5	-6 Prep	pare Re	ports		1	i i	
FLSOG			20-Feb-17	0.04	FL80640, FL80635 FL80660	FL80940, PM440,	24.0d					##						┞╍┼┠╴			F I		-5 PIE (-
12000			201100-17	0.00	PEODOD	LR320	24.00														T	0.5 1. 5	- PIES	Compr				i i	
C.Q.10.5	0.10.04.05 ATR CIC	01-Oct-13	31-Mar-14	130.0d			1000.0d										- ida	10.50	10 04	.05 ATR	cic					- I		i i	
FLSOG	10 ATR CIC	01-Oct-13*	31-Mar-14	130.0d	FL80700	FL80705, FL80706	1000.0d								1	-t∰	AT F	cc								- I		i i	
C.Q.10.50.1	0.05 AGR-7/-8 Irradiation Fuel Performance and	02-Aug-10	28-Jan-19	2216.0d			1621.0d				-		┿┿		l li	: 11			-		╺┥┽┿╸	━┿━╸	4		C.Q.10.5	.50.10.0	5 AGR	7/-8 Inta	31
C.Q.10.5	0.10.05.01 Fuel Fabrication	02-Aug-10	08-Nov-10	71.0d			2950.0d				-	C.Q.10.	50.10.0	1.01	Ernell Et	autina	the set						1			- I	(i	
FLSOS	70 Fabricate/Characterize AGR-7/-8 Compacts	02-Aug-10	25-Oct-10	61.0d	FL80580	FL80675, FL80672	1665.0d				-	Fabricat	e/Cher	atterio	A A	い事	Compa	EST			-111-						 †	í	"
FLSOG	72 AGR-7/-8 Fuel Compact Data Package Complete		25-Oct-10	0.0d	FLS0570	FLSD878	2960.0d				•	A38-7/-	8 Fuel	dama	act De	ta Pa	Nage o	oniple	te -										
FLSO	75 Ship Compacts to INL	26-Oct-10	08-Nov-10	10.0d	FL80670	FL80695	1665.0d				4	Shin Co	mpact	S IN	11													l i	
C.Q.10.5	0.10.05.02 Design & Assembly	02-Aug-10	09-Mar-12	420.0d			1406.0d						÷++	d. 1	50,60	0.05.00	(Des)	n & A	ssemb	ly .			1			- I	(i	
FLSO	80 AGR-7/-8 Experiment Design	02-Aug-10	28-Jan-11	130.0d	FL80575	FL30685	1406.0d				-	AGR-	7 8 E	derin		! III							1			- I	(i	
FLSO	85 AGR-7/-8 Design Complete		28-Jan-11	0.0d	FL30680	FL30690	1406.0d				6	//bR ● //bR	7 8 0	e ibn	omoie		1111	ŀ-++-	··- ···		-+++-								•
FLSOS	-	31-Jan-11	04-Nov-11		FLSD685	FL80695	1406.0d				L .		AG	8/1/-8	Fabrica	ate 🛔	ak hinan	comp	onent				1			- I	(i	
FLSO		07-Nov-11			FL80690, FL80675		1406.0d							ABR-	s te	stina	d Albert	mate					1			I	(II	i	
						1							H-	11-1	- 16°	: 10	1911	- 11	-		111	_							,
Remaining Level	of Effort Actual Work	Critical R	emaining Wo	irk.		F	Page 31 of 5	5						TA:	SK filte	er: All	Activit	les											1
	fort Remaining Work C																												

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Idaho National Laboratory

NGNP INTEGRATED SCHEDULE **DEVELOPMENT PLAN**

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NGNP INTEGRATED PLANNING SCHEDULE 9-29-2008 Activity ID 2008 2009 2012 2013 Activity Name Planned Predecessors Buccessors Total Float 2010 2011 2014 2015 2016 2018 2019 2020 2021 Duration FL80700 AGR-7/-8 Ready To Insert 09-Mar-12 0.0d FL80695 FL80705, FL80878, 1406.00 8 Read FLS0610, FLS0706 C.Q.10.50.10.05.03 Irradiation 1178.0 0 10.90.10 05.03 irradiation 01-Apr-14 31-Aug-16 632.0d]------AGR 7 Imadiation (W or S B) 410.0d FLS0700, FLS0605, FLS0710, FLS0715, 1000.00 FL80705 AGR 7 Irradiation (W or S B) 01-Apr-14 26-Oct-15 FL80610 FL80720 FL80706 AGR 8 Irradiation (NEFT) 01-Apr-14 31-Aug-16 632.0d FL80700, FL80605, FL80710, FL80715, 1178.0d R S Irradiation (NEFT) FL80610 FL80721 FL80710 AGR-7/-8 Data Analysis 01-Apr-14 26-Oct-15 410.0d FLS0705, FLS0706 FLS0715 1400.0d AGR-7/-8 Data Analysis GR-7/-8 Irradiation Complete FL80715 AGR-7/-8 irradiation Complete 31-Aug-16 0.0d FL80705, FL80710, FL80915, FC130, 1178.00 FL80706 FL80721 C.Q.10.50.10.05.04 P E & Safety Testing C.Q.10.50.10.05.04 PIE & Safety Testing 1621.0 27-Oct-15 28-Jan-19 850.0d AGR 7 Cool-down FL80720 AGR 7 Cool-down 130.0d FL80705 FL80725, FL80730 1000.00 27-Oct-15 25-Apr-16 FL80721 01-Sep-16 01-Mar-17 130.0d FLS0715, FLS0706 FLS0731 1178.0d AGR 8 Cool-down AGR 8 Cool-down FL80725 AGR-7/-8 PIE Planning 27-Oct-15 25-Apr-16 130.0d FL80720 FL80730, FL80731 1000.00 AGRIN 8 PIE Planning 7 Test Train Receipt & Inspection FL80730 AGR 7 Test Train Receipt & Inspection 26-Apr-16 23-May-16 20.0d FLS0720, FLS0725 FLS0735 1000.0 AG 20.0d FLS0725, FLS0721 FLS0736 AGR 8 Test Train Receipt & Inspection FL80731 AGR 8 Test Train Receipt & Inspection 02-Mar-17 29-Mar-17 1178.00 FL80735 AGR 7 Capsule Disassembly & Inspection 24-May-16 05-Dec-16 140.0d FL80730 FL80740, FL80750, 1000.04 AGR 7 Capsule Disassembly & Inspection FL80915 140.0d FL80731 FL80750, FL80915, FL80736 AGR 8 Capsule Disassembly & Inspection 30-Mar-17 11-Oct-17 1178.0d AGR 8 Capsule Disassembly & Inspe ction FLS0740 FL80740 AGR-7/-8 Safety Testing 19-Jul-16 03-Dec-18 620.0d FLS0735, FLS0736 FLS0745, FLS0765 1000.0 AGR-7/-8 Safety Tes AGR-7-8 Fuel Characterization 19-Jul-16 27-Mar-17 180.0d FLS0740 FL80765, FL80940 1229.00 FL80745 AGR-7/-8 Fuel Characterization AGR-7/-S ORINL Receipt Inspection 20.0d FL80735, FL80736 FL80755, FL80765 1178.0d FL80750 AGR-7/-8 ORNL Receipt inspection 20-Jul-17 16-Aug-17 AGR-7/-8 ORNL Safety Testin FL80755 AGR-7/-8 ORNL Safety Testing 160.0d FLS0750 FLS0760, FLS0765 1178.0d 17-Aug-17 28-Mar-18 FL80760 AGR-7/-8 ORNL Fuel Characterization 14-Sep-17 28-Mar-18 140.0d FL80755 1839.0d AGR-7/-8 ORNL Fuel Charact H AGR-7/-8 Prepare Records FL80765 AGR-7/-8 Prepare Reports 04-Dec-18 28-Jan-19 40.0d FL80755, FL80750, FL80770 1000.0d FLS0745, FLS0740 0.0d FLS0765 1000.04 AGR-7/-8 PIE Comp FL80770 AGR-7/-8 PIE Complete 28-Jan-19 ELS0940 C.Q.10.50.10.05 Fuel Performance Modeling 01-Oct-07 19-Aug-22 3858.0d 692.00 ____ Accident Beach 0.06.0 1112.00 Q.10.50 ihman C.Q.10.50.10.05.01 Accident Benchmark 02-Mar-09 29-Jan-10 240.0d FLS0840 1112.0d 🕮 Develop Accident FL80838 Develop Accident Condition Models 02-Mar-09" 22-May-09 60.0d FL80840 Calculate Accident Condition Benchmark 25-May-09 14-Aug-09 60.0d FL80838 FL80842 1112.0d ╚╍┫ ulate Acci Cases 60.0d FLS0840 FLS0845 1112.00 FL80842 Issue Accident Condition Benchmark Rep., 17-Aup-09 06-Nov-09 ⊷⊡ Issue Accid Report on Fuel Performance NRC Topi FL20845 NRC Topical Report on Fuel Performance 09-Nov-09 29-Jan-10 60.0d FLS0842 FL80940, PM310 1112.0d C.Q.10.50.10.06.02 PyC Modeling 01-Oct-07 31-Jul-09 453.0d 3281.00 0.50.10.0 Review PyC Measurement UNERI Report 01-Oct-07 29-Aug-08 FL80848 240.0d FL80850 3281.00 Review urem NER FL80850 Update PyC Models as Needed 01-Sep-08 31-Jul-09 240.0d FLS0848 EL80852 3281.00 Update PyC Mo els as N FL80855, FL80862, FL80852 0.0d FLS0850 Issue PyC Model Status Report as Needed 31-Jul-09 3281.0d ssue PyC Model Status Rep FLS0870, FLS0878, FL30885_FL30892 FL80900, FL80908, FL80915 C.Q.10.50.10.05.03 Irradiation Pre-Test Predictions 02-Nov-09 16-Nov-12 795.0d 2601.0d .c. 10.50 kg jos.os leeded ABR(2) Irradiation Pre-Test Pr edictions date PARFUME Models as 02-Nov-09 22-Jan-10 60.0d FLS0852, FLS0317, FLS0858 3216.0d FL80855 Update PARFUME Models as Needed AGR-2 FL80345

FL80858 Calculate AGR-2 Irradiation Pre-test 25-Jan-10 16-Apr-10 60.0d FLS0855 FL30860 3216.0d Calcula A C D ╋⊂ Predictions EL 20860 Issue AGR-2 Pre-test Prediction Report 19-Apr-10 09-Jul-10 60.04 EL 80858 EL 80928 3216.06 Issu 60.0d FLS0852, FLS0447, FL80862 Update PARFUME Models as Needed for FL80865 3011.0d L-Undate P els as Nedded fo 16-Aug-10 05-Nov-10 AGR-3/-4 FL80475 3011.0d FL80865 Calculate AGR-3/-4 Irradiation Pre-test 08-Nov-10 28-Jan-11 60.0d FLS0862 FL30858, FL30875, Predictions FL80882 -4 Pre-test Prediction Report FL30868 Issue AGR-3/-4 Pre-test Prediction Report 31-Jan-11 22-Apr-11 60.0d FL80865 FL80928 3011.0d Page 32 of 55 TASK filter: All Activities Remaining Level of Effort Actual Work Critical Remaining Work Remaining Work 🛆 Actual Level of Effort Start Constraint (c) Primavera Systems, Inc

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FLB0870 Updat AGR-1 FLB0872 Calcul Fredic FLB0875 Issue FLB0878 Updat AGR-1	ulate AGR-5/-6 Irradiation Pre-test	Start 12-Sep-11	Finish	Planned														2016		2017	20	018	2019	202	20
AGR-5 FL80872 Calcul Predic FL80875 Issue FL80878 Updat FL80880 Calcul	-5/-6 ulate AGR-5/-6 Irradiation Pre-test Ictions	12-Sep-11		Duration	Predecessors	Successors	Total Float	2008	2009	2010	2011	2012	2	2013	2014	2	015	2016	, ,						
FL80875 Issue FL80878 Updat AGR-5 FL80880 Calcul	Ictions		02-Dec-11	60.0d	FL80852, FL80567, FL80590	FL80872	2731.0d				TF	Upber	e P.AF	RFUME	odela a	o Netes	iedifor	AGR-5	:~e	Т	1				T
FLS0878 Updat AGR-5 FLS0880 Calcul	AGR-5/-6 Pre-test Prediction Report	05-Dec-11	24-Feb-12	60.0d	FL80870	FL80875	2731.0d					-	culte	AGR-6/	6 intadiz			Predict	ions						
AGR-5 FLS0880 Calcul		27-Feb-12	18-May-12	60.0d	FL80865, FL80872	FL80928	2731.0d				11 4	┍┓╡╟	ssue A	VCR-5-6	Pre-bes	Predi	ction R	eport							
FLS0880 Calcu Predic	ate PARFUME Models as Needed for -5/-6	12-Mar-12	01-Jun-12	60.0d	FL80852, FL80672, FL80700	FL80880	2601.0d				'		Update	e PARFL	ивиос	eis as	Need	ed for A	GF-5	-6					
	ulate AGR-5/-6 Irradiation Pre-test Ictions	04-Jun-12	24-Aug-12	60.0d	FL80878	FL80882	2601.0d				Π	-	Gal	culate A0	R-4/-6 I	radiat	ion Pre	-test Pi	red otio	ins					
FLS0882 Issue	AGR-5/-6 Pre-test Prediction Report	27-Aug-12	16-Nov-12	60.0d	FL30865, FL30880	FL80928	2601.0d					4		isue ABI		e-test	Predic	tion Rep	201						
Q.10.50.10.05.04 Saf	afety Test Predictions	30-Mar-10	06-Dec-17	2007.0d			1283.0d			·											- C.Q	2.10.50	.10.06.0	4 Safet	ty Test P
FL80885 Updat AGR-1	ate PARFUME Models as Needed for -1 Safety Tests	30-Mar-10	22-Jun-10	60.0d	FL80120, FL80160, FL80852	FL80888	3110.0d				te PARF		odes				afety								
	ulate AGR-1 Safety Predictions	22-Jun-10	14-Sep-10		FL80885	FL30890	3110.0d			Ca	ilculate A	3 8-1 B	afet (I	Predictio		LIL									
	AGR-1 Safety Test Prediction Report	14-Sep-10			FLSD888	FL80928	3110.0d		1	-	Issue AG	R·IS	letr Te	es: Predi	ing Pe	por			H I						
AGR-	ate PARFUME Models as Needed for -2 Safety Tests	03-Dec-12			FL80360, FL80380, FL80852		2411.0d								PARFU	ME MA	des a	s Need	ed for/	AGR-2	2 Salet	ty Test	5		
	ulate AGR-2 Safety Predictions	25-Feb-13			FL80892	FL30898	2411.0d						- Hg		iat ∳≬kG										
	AGR-2 Safety Test Prediction Report				FL80895	FL80928	2411.0d							-	ne Mari Alfinun	2 501	ety Te	st Predi	ction R	tepart					
AGR-	ate PARFUME Models as Needed for -3/-4 Safety Tests	22-Oct-12	14-Jan-13		FL80490, FL80510, FL80852		2441.0d				Щ	_								/GR-3/-	r-4 Safe	ety Tes	985		
	ulate AGR-3/-4 Safety Predictions	14-Jan-13			FL80900	FL80905	2441.0d						٦Ē	Calcu	e NGR-	-314	Banty	Predict	on						
	AGR-3/-4 Safety Test Report	08-Apr-13	01-Jul-13		FL80902	FL80928	2441.0d							4	n nar-	1-4 8a	net T	est Rep	ort						
AGR-	ate PARFUME Models as Needed for -5/-6 Safety Tests	19-May-14	-		FL80605, FL80630, FL80852	FL80910	2031.0d									Update	: P.NR	FUNE	violieis				R-5/-6 8	afety Te	ests
	ulate AGR-5/-6 Safety Predictions	11-Aug-14			FL30908	FL80912	2031.0d								│ │ ! ╡╞	l ¢≢≪	ulate.	AGR-5/ 3R-5/-6	-6 starte	ty Free	ediction	ns			
	AGR-5/-6 Safety Test Report	03-Nov-14			FL80910	FL80928	2031.0d								╞╌╽┊╢═	EL.	SUE A	GR-5/-6	8 1 1						
	ate PARFUME Models as Needed for -7/-8 Safety Tests	30-Mar-17	21-Jun-17	60.04	FL80715, FL80735, FL80852, FL80975, FL80736	FL80918	1283.0d														pdate P	PARFU	ME Mod	dels as l	Needed
FLS0918 Calcul	ulate AGR-7/-8 Safety Predictions	22-Jun-17	13-Sep-17	60.0d	FL80915	FL80920	1283.0d												-	H (Calcula	late AG	R-7/-8 8	Bafety P	Predictic
	AGR-7/-8 Safety Test Report	14-Sep-17			FL80918	FL80928	1283.0d												- !!		Issu		R-7/-8 Sa		
	minary NRC Topical on Fuel Perform		23-Apr-13			LR270, FL80940	271.0d						լե	Prelin	inery N	RC TO	pical o	n Fuel F	Perlana	nance					
Q.10.50.10.05.05 Ver		29-Dec-14	19-Aug-22	1995.0d			692.0d												++						
	Code V&V Activities	29-Dec-14	-	773.0d	FL80928		1914.0d				++	-+-+-			ŀ-ŀi+!	t i i i i i i i i i i i i i i i i i i i					Flar	n Code	V&V A	ctivities	
FL80928 Calcul	ulate V&V Cases	07-Dec-17	13-Dec-17	5.0d	FL80968, FL80955, FL80920, FL80912, FL80905, FL80898, FL80890, FL80882, FL80890, FL80888, FL80875, FL80868, FL80860	FL80930, FL80925	1283.0d														- Car	iculate 1	VâV Ca	ses	
FL80930 Draft V	V&V Report	14-Dec-17	20-Dec-17	5.0d	FL80928	FL80932, FL80935	1283.0d													_	Dra	aft V&V	Report		
FL80932 Incorp	porate/Resolve Comments for V&V	21-Dec-17	27-Dec-17		FL80930		1904.0d													F			te/Resol	ive Com	iments f
Repor	V&V Report	21-Dec-17	27-Dec-17	5.0d	FL80930	FL80938, FL80940	1283.0d													L	H Issu	ue V&V	/ Report	t	
	 Source in suppliers 		27-Dec-17	0.0d	FL80935		1904.0d				11				F-1111	1111					Fue	el Perfi	mance	Model	Validati
	- The second second		27-Dec-17	0.0d	FL80935		1904.0d									FTF				L.	 Fue 	el Perfo	ormance	Model	Valida

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		Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009	9 2010	20	011	2012	2013	3 3	2014	201	5 2	016	201	7	2018	2019	2020	202	21 2
	FL30940	Final NRC Topical Report for Fuel Performance	20-Aug-21	19-Aug-22		FLB0745, FLB0935, FLB0415, FLB0770, FLB0865, FLB0770, FLB0845, FLB0770, FLB0845, FLB0720, FLB1010, FLB1002, FLB1010, FLB1020, FLB1010, FLB1020, FLB1020, FLB1020, FLB1955, FLB1365, FLB1355, FLB1365, FLB1350, FLB1360, FLB1500, FLB1320, FLB1075, LR360	PM901, LR380	332.0d																			
	C.Q.10.50.10.06	05 Maguais	01-Oct-08	03-Aug-10	465.0d			3199.0d	Ι.			0.010	.50.10.0	5 1 5 M	nuais				I 1								
	FL80945	Draft Theory Manual	01-Oct-08*	17-Mar-09	120.0d		FL80948	3199.0d		-	aft Theory N																
	FL80948	Incorporate/Resolve Comments	18-Mar-09	12-May-09		FL80945	FL80950	3199.0d			ncorporate/		Comine					11								- 11	
	FL80950	Issue Theory Manual	13-May-09	09-Jun-09		FL80948	FL80952	3199.0d			issue Theor	++			ŀ} <u>}</u>	-+	┊╢╌┾	•++			++	4	/			· -	
	FL80952	Update Theory Manual (as needed)	10-Jun-09	01-Sep-09		FL80950	FL80955	3199.0d	1	Lee <u>r</u> i	Update T	heory	tanual (a	sreede					1								
	FL80955	Issue Finalized Theory Manual		01-Sep-09		FL80952	FL80928, FL80958	3199.0d			Issue Fin	alized	heory M	inual	F			•++			++	1 1					
	FL30958	Draft Users Manual	02-Sep-09	16-Feb-10		FL80955	FL80960	3199.0d		L L	Draf	t Users	Manual														
	FL80960	Incorporate/Resolve Comments	17-Feb-10	13-Apr-10		FL80958	FL80952	3199.0d					e/Resply	e comr	rents												
	FL80962	Issue Users Manual	14-Apr-10	11-May-10		FL80960	FL80965	3199.0d					ers Manu		+}		: :::-:-:	•++			++					·	
	FL80965	Update Users Manual (as needed)	12-May-10			FL80952	FL30968	3199.0d					Users N		as need	en											
	FL80968	Issue Finalized Users Manual		03-Aug-10		FL80965	FL80928	3199.0d					Inalized				÷╫-ŀ-	-++	†	+	1+	1					
		.07 Property Measurement	01-Oct-07	01-May-15	1953.0d			1781.0d			-						<u> </u>	-	0.10.5	0.10.0	507 P	hoper	v Measure	ement			
	FL80970	Un-Irradiated Property Measurements	01-Oct-07	06-Nov-09	550.0d		FL80972	1781.0d			Un-ima	diated P	roperty	/easure	ments												
	FL80972	Irradiation of Samples	09-Nov-09	04-May-12	650.0d	FL80970, FL80350	FL80975	1781.0d		t	-				listice o	fSamp	id	•++			++			,			
	FL80975	Irradiated Property Measurements	07-May-12	01-May-15		FL80972	FL80915	1781.0d					Ģ			+ + +	***		adlated	Prop	in Me	sesure	ments				
		.08 GIF VHTR Bench marking	01-Oct-08	30-Sep-14	1550.0d			2750.0d								-		CI0.10					ench marki	Ing			
	FL80978	GIF VHTR Bench marking	01-Oct-08*	30-Sep-14	1565.0d			2750.0d		1							ille I	GIF VH	R Ben					-			
	C.Q.10.50.10.07 F	Ission Product Transport & Source Term	01-Jul-08	02-Jul-18	2586.0d			1772.0d	-												-	┿╾╍┥	- C.O	10.50.10.0	07 Fissio	n Prop	uct Transp
	C.Q.10.50.10.07	.01 FPT & Source Term Planning			0.0d			0.0d				††		++	h	-1-1-1	111-1-	•++			<u>+</u> †	1					
		.02 AGR-3/-4 Fission Product Transport &	15-Aug-11	02-Jul-18	1795.0d			1151.0d				- 11				.	ill I				╫	┿╾┥	- C.O	10.50.10/	07.02 AG	R-34	Fission Pr
	FL80980	Initiate Preliminary NRC Topical Report for NGNP Fission Product Transport	29-Jun-15	02-Jul-18	785.Dd	FL80545	FL80940	1151.0d										╎┶╸			+	Ħ	initia	ate Prelimir	nary NRC	Topics	al Report 1
	C.Q.10.50.10	07.02.01 Measure Fission Gas Release A	15-Aug-11	24-Mar-14	680.0d			2266.0d				- 11					C Q 1	0.50.10	07.02.0	1 Me	sure F	Fissio	1 Gas Reir	ease AGR-	-3/-4		
	FLS1000	Irradiation/online Gas Release AGR-3/-4	15-Aug-11	11-Mar-13		-	FL80940	2536.0d	L				-		па	diation			ease A								
	FL81005	Measure Iodine/Tellurium Release AGR	26-Aug-13	25-Nov-13		FL80520	FLS1010	2266.0d				T.			1		a a a a a a a a a a a a a a a a a a a		elluriun	h Rele	se AG						
	FLS1010	Report Results/Upgrade Models AGR-3/-4	25-Nov-13	24-Mar-14		FL81005	FL80940	2266.0d							'	-	Repp	t Resul									
		.07.02.02 Measure Fission Gas Under CC	11-Mar-13	12-Aug-15	632.0d			1904.0d							-		ill İ				07.02	202 1	leasure Fi	ission Gas	Under Ci	DCD N	GR-3/-4
	FL81015	Reactivate Test Specimens AGR-3/-4	11-Mar-13	10-May-13		FL80530	FL81020	1904.0d	I						╞┛╹	leactiv		t Bpeck	ens A		4						
	FLS1020	Measure Gas and Iodine AGR-3/-4	10-May-13	13-Mar-15		FL81015	FL81025	1904.0d							- <u>-</u>			Me			i lodine						
	FL81025	Report Results/Upgrade Models AGR-3/-4	13-Mar-15	12-Aug-15		FLS1020	FL80940	1904.0d									<u>: </u> '						Models AG				
		.07.02.03 Measure Fission Metal Release	08-Apr-13	09-Sep-15	632.0d			1884.0d													11			Fission Met	tal Releas	ie ASR	1-3/-4
	FL81030	Measure Fission Metal Release AGR-3/-4	08-Apr-13	13-Apr-15		FL80535	FL81035	1884.0d															se AGR-3				
	FL81035	Report Results/Upgrade Models AGR-3/-4	13-Apr-15	09-8ep-15		FL81030	FL80940	1884.0d										1=	Repo	rt Res	its/Up)	grade	Models A				
		.07.02.04 Measure/Model Fission Metal R	04-May-15	14-Feb-18	727.0d			1249.0d									<u>.</u>										Model Fiss)
	FLS1040	Measure Fission Metal Release AGR-3/-4	04-May-15	18-Sep-17		FL80515	FL81045	1249.0d										-			Г	M	asure Fisr	sion Metal			3/-4
	FL81045	Report Results/Upgrade Models AGR-3/-4	18-Sep-17	14-Feb-18		FLS1040	FL80940	1249.0d																Results/Up	-		GR-3/-4
	C.Q.10.50.10 FL81050	07.02.05 Measure Diffusivities of Ag Cs A Measure Fission Product Diffusivities AGR-3/-4	11-Mar-13 11-Mar-13	12-Aug-15 16-Mar-15	632.0d 525.0d	FL80530	FL81055	1792.0d 1792.0d							-			M	C.Q.1	0.50.1 Ission	11		veasure Di usivities Ad	iñusivities GR-3/-4	of Ag Cs.	AGR(3	/~4
Ren	naining Level of Eff	ort Actual Work	Critical R	emaining Wo	rk		F	age 34 of 5	55					TA	SK filte	r: All A	ctivitie	36	•								
1.151	and groups of Ellip	record rests	Services IV											1													

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		Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009	2010	2011	2012	2013	201	4 20	115	2016	20	17	2018	2019	2020	20	021
	FL81055	Report Results/Upgrade Models AGR-3/-4	16-Mar-15	12-Aug-15	107.0d	FL81050	FL81060	1792.0d				T			: 111	╷╷╘╾═╸	Re	oor Res	ute Up	g ade N	Models A	GR-3/-4			
	C.Q.10.50.10.	07.02.05 Update Corr for Fission Diffusivit	12-Aug-15	15-Jan-16	112.0d			1792.0d				-+	-+-+		1-1-111	T		C.Q.10	50.10.	07.020	06 Upda	te Corr for	Fission	Diffusiv	ties
	FLS1050	Update Models AGR-3/-4	12-Aug-15	11-Nov-15	65.0d	FL81055	FL81065	1792.0d								4	ч ф а,	Jpdate N	lodels /	AGR-1	-4				1
	FL81065	Test Models AGR-3/-4	11-Nov-15	07-Dec-15	18.0d	FL81060	FL81070	1792.0d									Ŧ	Test Mo	dels A0	3R-3/-4					1
	FL81070	Report Results AGR-3/-4	07-Dec-15	15-Jan-16	29.0d	FL81065	FL80940	1792.0d									-0	Report	Result	s AGF	3/-4				1
C.	Q.10.50.10.07.	03 AGR-5/-6 Fission Product Transport &	01-Oct-09	27-Mar-18	2214.0d			1219.0d									-		┥┽┽	+ +	C.Q.1	0.50.10.07	.03 AG	R-5/-6	lssi
	C.Q.10.50.10.	07.03.01 Measure Fission Gas Release A	26-Mar-12	09-Feb-15	750.0d			2036.0d							iii-	C C	Q.10.5	0.10.07.	01.01	Neasu	re Fissio	n Gas Rel	ease AG	R-5/-6	r
	FL81075	Irradiation/online Gas Release AGR-5/-6	26-Mar-12	21-Oct-13	410.0d	FL80595	FL30940	2376.0d					╘╞╞╧═		i Iradi	tion/onlin	e Gas i	Release	AGR-5	7-6				1	1
	FL81080	Measure Iodine/Tellurium Release AGR	14-Jul-14	13-Oct-14	65.0d	FL30640	FL81085	2036.0d							: 	Meas	sun: loc	ine/Teliu	nin R	ielease	AGR-5/	-6			1
	FL81085	Report Results/Upgrade Models AGR-5/-6	13-Oct-14	09-Feb-15	85.0d	FLS1080	FL80940	2036.0d								-C R	epurt R	esults/U	ograde	Model	s AGR-5	/-6			1
	C.Q.10.50.10.	07.03.02 Measure Fission Gas Under CC	06-Oct-14	08-Mar-17	632.0d			1494.0d							: :		+-		c.	.0.10.5	0.10.07.	03.02 Me	asure Fis	sion G	as l
	FL81090	Reactivate Test Specimens AGR-5/-6	06-Oct-14	05-Dec-14	44.0d	FL80650	FL81095	1494.0d				-			1-1-111	Re:	activate	Test Sp	edimen	15 AGR	-5/-6				[
	FL81095	Measure Gas and Iodine AGR-5/-6	05-Dec-14	07-Oct-16	480.0d	FL81090	FLS1100	1494.0d								4						ine AGR-9			
	FLS1100	Report Results/Upgrade Models AGR-5/-6	07-Oct-16	08-Mar-17	108.0d	FL81095	FL80940	1494.0d											R R	eport R	esults/U	pgrade Mo	dels AG	R-5/-6	1
	C.Q.10.50.10.	07.03.03 Measure Fission Metal Release	03-Nov-14	18-May-15	140.0d			1966.0d								╎┿━╍╸	C Q.1	0.90.10.	07.03.0	13 Mea	sure Fis	sion Metai	Release	AGR	V-6
	FL81105	Measure Fission Metal Release AGR-5/-6	03-Nov-14	18-May-15	140.0d	FL80655	FL81110	1966.0d	l								Neas				ase AGR				L
	FLS1110	Report Results/Upgrade Models AGR-5/-6		18-May-15	0.0d	FL81105	FL80940	1966.0d				T	TT		1771		Repo	rt Results	siUpgra	scie Mo	dels AGi	R-5/-6			ſ_
	C.Q.10.50.10.	07.03.04 Measure/Model Fission Metal rel	14-Jul-14	26-Apr-17	727.0d			1459.0d							•		-		I I I			7.03.04 M			ssi
	FL81115	Measure Fission Metal Release AGR-5/-6	14-Jul-14	28-Nov-16	620.0d	FL80635	FL81120	1459.0d							4+1					sure Fis	ssion Me	tal Releas	e AGR-9	/-6	
		Report Results/Upgrade Models AGR-5/-6	28-Nov-16	26-Apr-17	107.0d	FL81115	FL80940	1459.0d											╡┿╋╴	Report	Results/	Upgrade N	lodels A	3R-5/4	Ł
	C.Q.10.50.10.	07.03.05 Fission Product Sorption Measur	01-Oct-09	27-Mar-18	2214.0d			1219.0d													C.Q.1	0.50.10.07	.03.05	ission	Pro
	C.Q.10.50.	0.07.03.05.01 Measure Sorption on Matri	01-Oct-09	29-Aug-12	760.0d			2481.0d				-		C.Q.10.50		3.05.01 /	Versur	e Sorptio	n an M	latrix &	Graphit				ſ
	FL81129	FP Sorption - Development Experimental Methods	01-Oct-09*	28-Apr-10	150.0d		FL81130, FL81165	1326.0d		ą	FP 80	rption - D	evelopme	nt Experir	bental M	ettods									
	FL81130	FP Sorption - Acquire and Assemble Equipment and Materials	29-Apr-10	24-Nov-10	150.0d	FL81125	FL81135	2481.0d				FP Sorpti	on - Acqui	ire and As	senble	Equipmer	nt and P	/aterials							
	FL81139	FP Sorption - Develop, Cost, and Validate Procedures	25-Nov-10	13-Apr-11	100.0d	FL81130	FL81140	2481.0d			┊└╍ <mark>┍</mark>	FP St	omption - C	Develop, C	bs, and	Validate i	Proced	ures							
	FLS114	FP Sorption - Measure Sorption	14-Apr-11	11-Apr-12	260.0d	FL81135	FL81145	2481.0d			L 1	-	FP 8	Sorption -	ķiepsure	Serption									
	FLS114	FP Sorption - Report Results	12-Apr-12	29-Aug-12	100.0d	FL81140	FL81150	2481.0d				-		FP Sorptia	n Rep	ort Result	s		111						[
	C.Q.10.50.	0.07.03.05.02 Update TRAFIC, TRAMP,	30-Aug-12	24-May-13	192.0d			2481.0d					-	- C	a.10.50	10.07.03	.05.02	Update 1	TRAFK	C TRA	MP, SOF	RS & TMA	P		1
	FL8115	FP Sorption - Improve Models	30-Aug-12	28-Nov-12	65.0d	FL81145	FL81155	2481.0d					╎┡═	FP Son	dian - In	iprove Mo	dels								
	FL8119	FP Sorption - Test Models	29-Nov-12	28-Feb-13	66.0d	FL81150	FL81160	2481.0d						- - - - - - - - - - - - - - - - - - -			dels								
	FL8116	FP Sorption - Report Results	01-Mar-13	24-May-13	61.0d	FL81155	FL80940	2481.0d						Filler	Sorptic	n Repo	rt Resu	ilts	111						
	C.Q.10.50.	0.07.03.05.03 Measure Sorption on Struc	01-Mar-10	05-Jul-17	1918.0d			1219.0d												C.Q.1	10.50.10	07.03.05.	3 Meas	ure So	ptic
	FL81168	FP Sorption - Develop Experimental Methods & Procedures	01-Mar-10*	28-Jan-11	240.0d	FL81125	FL81170	1219.0d			і на Г	FP Sorp	stion - De	velop Exp	erimentz	i Nethods	s & Pro	cecures							
	FL8111	FP Sorption - Measure Sorption	31-Jan-11	21-Feb-14	800.0d	FL81165	FL81175	1219.0d			ا ا	4			i i i i i i i i i i i i i i i i i i i	Sorption	- Heas	sune Sorp	n dian						1
	FLS111	FP Sorption - Perform Decontamination T	24-Feb-14	06-Jan-17	750.0d	FLS1170	FLS1180	1219.0d							╩╉═╧				∎ FP	Sorptio	n - Perk	m Decor	taminatio	n Test	Ł
	FL8118	FP Sorption - Report Results	09-Jan-17	05-Jul-17	128.0d	FL81175	FL81185	1219.0d										5		FP St	orption -	Report Re	suits		1
	C.Q.10.50.	0.07.03.05.04 Update PADLOC	06-Jul-17	27-Mar-18	189.0d			1219.0d				-			rtt				111		C.Q.1	0.50.10.07	.03.05.0	4 Upd	te I
	FLS118	FP Sorption - Improve Models	06-Jul-17	28-Sep-17	61.0d	FLS1180	FL81190	1219.0d											+4	F F	Sarptio	n - Improve	e Models		
	FLS119	FP Sorption - Test Models	29-8ep-17	26-Dec-17	63.0d	FL81185	FL81195	1219.0d											[FP Sorp	ion - Test	Models		
		FP sorption - Report Results	27-Dec-17	27-Mar-18		FLS1190	FL80940	1219.0d													FP so	rption - R	eport Re	sults	1
C.	Q.10.50.10.07.	04 Out-of-Pile Loop	01-Oct-10	22-Sep-16	1560.0d			1612.0d			-				+ + +		-		C Q.10	0.60.10	.07.04 C	out-of-Pile	Loop		1
	C.Q.10.50.10.	07.04.01 Measure Deposition of Cs, Ag, I	01-Oct-10	24-Dec-15	1365.0d			1614.0d										C.Q.10.	50.10.0	07.04.0	1 Meas	ure Depos	tion of C	s, Ag, I	ā.1
	FL81340	OPLT - Develop Experimental Technique	01-Oct-10*	30-Sep-13	782.0d		FL81345, FL81370	1612.0d							OPLT	- Develop	Experi	mentai T	Techniq	ue					1
	FL81345	OPLT - Measure Deposition	01-Oct-13	30-Sep-15	522.0d	FL81340	FL81350	1614.0d			Г			5	i 📫	-	0	PLT - Me	easure	Deposi	ltion				1
	FL81350	OPLT - Report Results	01-Oct-15	24-Dec-15	61.0d	FL81345	FL81355	1614.0d										OPLT -	Report	t Result	ts				1
	C.Q.10.50.10.	07.04.02 Update Correlations for Fission	25-Dec-15	20-Sep-16	193.0d			1614.0d									ГŦ		c.q.10	1.60.10.	.07.04.03	2 Update	Correlati	ns for	Fise
	FL81355	OPLT - Improve Models	25-Dec-15	24-Mar-16	65.0d	FL81350	FL81360	1614.0d			·····	-†	-+-+		†+++		-	OPLI	T Imp	rove No	odels				h
	FL81360	OPLT - Test Models	25-Mar-16	24-Jun-16	66.0d	FL81355	FL81365	1614.0d									Ģ	• 1 •	FLT-T	iest Mo	dels				1
								Page 35 of 8	55				 Π/4	ASK filter	All Act	vities	-	- 	•••	+ +					<u> </u>
aining	g Level of Effo	rt Actual Work	Critical Re	emaining We	ork			age so or i						net's model.											

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Planned Predecessors Duccesso Duration 62.06 FL81360 FL80940 1367.0d 782.0d FL81340 FL81370 782.0d FL81370 FL81380 FL81380 63.0d FL81375 FL81385 FL81385 193.0d 65.0d FL81385 FL81390 65.0d FL81385 FL81395 FL81395 98.0d 1898.0d 1848.0d 1848.0d	0 1614.00 1612.00 1612.00 0 1612.00 1612.00 1612.00 0 1612.00 00 1612.00 95 1612.00	2008 2009 201	0 2011	2012	2013	2014	2015	1 4	- 6F4	2017		sults		2020	2021	20
1367.00 782.00 FL81340 FL81375 522.00 FL81370 FL81380 63.00 FL81375 FL81380 65.00 FL81380 FL81380 66.00 FL81380 FL81390 62.00 FL81390 FL803940 1998.00	1612.0d 15 1612.0d 1612.0d 1612.0d 1612.0d 1612.0d 1612.0d 1612.0d 1612.0d		-			\square									T	
782.0d FL81340 FL81375 522.0d FL81370 FL81380 63.0d FL81375 FL81385 193.0d 65.0d FL81380 65.0d FL81385 FL81390 65.0d FL81385 FL81390 65.0d FL81385 FL81390 98.0d FL81390 FL81390	15 1612.0d 10 1612.0d 1612.0d 1612.0d 1612.0d 1612.0d 1612.0d		-			⊢┼─		- c.a.	10.40							
522.0d FL61370 FL61380 63.0d FL61375 FL61385 193.0d 65.0d FL61380 FL61390 66.0d FL61385 FL61395 62.0d FL61390 FL603940 1988.0d	00 1612.0d 85 1612.0d 1612.0d 80 1612.0d 85 1612.0d		•							ann ine	лрз ме	asure R	e-entrainr	ment of R	adionu	cildes
63.00 FL81375 FL81385 193.0d 65.0d FL81380 FL81390 66.0d FL81385 FL81395 62.0d FL81390 FL803940 1988.0d	85 1612.0d 1612.0d 80 1612.0d 85 1612.0d					PLT - D	evelop Ex	periment	tai Tech	nique						
63.00 FL81375 FL81385 193.0d 65.0d FL81380 FL81390 66.0d FL81385 FL81395 62.0d FL81390 FL803940 1988.0d	85 1612.0d 1612.0d 80 1612.0d 85 1612.0d							OPLT -	- Measu	re Depo	osition					
65.0d FL01380 FL01390 66.0d FL01385 FL01395 62.0d FL01390 FL00940 1998.0d FL01390 FL00940	90 1612.0d 95 1612.0d									ort Resu						
65.0d FL01380 FL01390 66.0d FL01385 FL01395 62.0d FL01390 FL00940 1998.0d FL01390 FL00940	90 1612.0d 95 1612.0d							F	111			4.04. Imr	prove Re-	entrainme	en Mor	del In i
66.0d FL81385 FL81395 62.0d FL81390 FL80940 1988.0d	95 1612.0d				i	11		- o	-	mprove N						
62.0d FL81390 FL80940					1					- Test M						
1988.Dd	0 1612.0d					h		-		T - Rep				·		
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1848.00	1183.0d		-		!	1							0.10.07.05			
	1183.0d		-										7.05.01 N	vieasure i	Radions	uclide
782.0d FL81405	05 1183.0d		<u>a</u>			PLT - De	evelop inte	mational	I Collabe	pration of	a in-Pile	e Test				
261.0d FL81400 FL81410, FL81440	10, FL81420, 1183.0d				╘╺╧	⊨ ⊨	IPLT - S	becity Te	est Prog	am and	/ Select	Loop				
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Form 412.09 (Rev. 10)

Idaho National Laboratory

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		TED PLANNING																							
		Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009	2010	2011	2012	2013	201	4 20	15	2016	20	017	2018	2019	2020	0 202	8 2
		Select Measurement Technique-Tritium Permeation-TRIBO Particles	15-8ep-11	18-Jan-12	90.0d	FL81525	FL81535	806.0d				╷╺╞	Select I	Veasuren	ent Tech	in que-Tri	tium P	emea	ion/TR	ISO Par	ticles		<u> </u>		
		Construct/Commission Test Facility-Tritium Permeation-TRISO Particles	19-Jan-12	19-Dec-12	240.0d	FL81530	FL81540	806.0d				╞╺╼┋		Constru	ict/Comr	nission Te	esi Fac	iliti - Tr	tium Pe	smeatio	n-TRISC	Particles			
		Perform H-3 Release Measurements-Tritium Permeation-TRISO	27-Sep-12	19-Feb-14	365.Dd	FL81535	FL80545	806.0d							er Per	form H-3	Releas	se Mea	isuneme	ento-Trit	lum Perm	eation-TR	180 Par	lcles	
	C.Q.10.50.10.0	07.07.02 H-3 Sorptivites of Core Graphite	01-Oct-09	07-Nov-12	810.0d			1141.0d					╈╍╈╍╼┲	C.Q.10.	0.10.07	07.02 H-	3 Borp	tivites	of Clore	Graphi	e				
	·	Prepare Test Specs-Tritium Permeation-Sorptives of Core Graphites	01-Oct-09*	03-Feb-10	90.0e		FL81550, FL81555	1141.0d		ġ	Prepare 1	Test Specs				res of Co									
		Select Measurement Technique-Tritium Permeation-Sorptives of Core Graphites	04-Feb-10	09-Jun-10	90.0d	FL81545	FL81555	1141.0d		L	Belec	t Measurer	rent Tec	hnique-Ti	itium Pe	meation-	Sinptiv	es of (Core Gr	aphites					
		Construct/Commission Test Facility-Tritium Permeation-Sorptives of Core Graphites	10-Jun-10	13-Oct-10	90.0e	FL81545, FL81550	FL81560	1141.0d			╘╍╤╴╕	onstruct/Co	omnissio	n Test Fa	cility-Trit	un Perm	neation-	-Serpti	vesoro	Core Gra	aphites				
		Measurement: Replacable Graphite-Tritium	14-Oct-10	22-Jun-11	180.0d	FL81555	FL81565	1141.0d			╏ _┺ ┏═	Meas	arement	: Replaca	ble Grap	hile-Tritiu	mPerr	nestio	n-Serpt	ives of (Core Gra	shites			
		Permeation-Sorptives of Core Graphites Measurement: Permanent Graphite-Tritium Permeation-Sorptives of Core Graphites	23-Jun-11	29-Feb-12	180.0d	FL81560	FL81570	1141.0d				- <u></u>	Neasu	rement: R	ermaner	t Graphit	te-Tritia	im Per	meator	n-Sorpt	ves of Co	re Graphi	ies		
	FL81570	Measurement: Fuel Compact Matrix-Tritium	01-Mar-12	07-Nov-12	180.0d	FL81565	FL80545	1141.0d				_	d d d d d d d d d d d d d d d d d d d	Measure	ment: Fi	e Comp	ac Ma	trix-Tri	tum Pe	rmeatio	n-Sorptiv	es of Core	Graphit	es	
		Permeation-Sorptives of Core Graphites	D/ 0-100	27.14				2440.04		_									_				1		
		07.07.03 H-3 Release from B4C Pellets Prepare Test Specs-Trittum	01-Oct-09 01-Oct-09*	07-Mar-12 03-Feb-10	635.0d 90.0d		FL01580, FL01585,	3419.0d 1316.0d		4	Prepare 1	Test Specs		0.50.10.0 Permeatic			ase nor	m #4C	Pelles						
		Permeation-B4C Pellets Fabricate Test Articles-Tritium	04-Feb-10	13-Oct-10	180.0d	FL81575	FL81590	3784.0d		-	•	abricate Te	st Article	s-Tritium	Permeat	ion-84C F	Pellets								
	FL81585	Permeation-B4C Pellets Select Measurement Technique-Tritium	04-Feb-10	09-Jun-10	90.0e	FL81575	FL81590	1316.0d			Selec	t Measurer	rent Tec	hnique-Ti	itium Pe	meation-	B-C P	ellets							
		Permeation-B4C Pellets Construct/Commission Test Facility-Tritium	10-Jun-10	13-Oct-10	90.0d	FL81575, FL81585	FL81595	1316.0d			-	onstruct/Co	omnissio	n Test Fa	cility-Trit	un Perm	nextion-	-BAC F	elets						
		Permeation-B4C Pellets Perform H-3 Release	14-Oct-10	07-Mar-12	365.0d	FL81590	FL80545	1316.0d					Fertor	m H-3 Re	lease Me	asureme	nto-Tri	tun P	enneati	on-84C	Pellets				
		Measurements-Tritlum Permeation-84C														1									
		7.07.04 H-3 Permeability of HX Metals Prepare Test Specs-Tritium	01-Oct-09 01-Oct-09*	17-Jul-13 03-Feb-10	b0.0ee b0.0e		FL81605, FL81610	741.0d 741.0d			Dresses 7	Test Specs	-	Comparis		apility of			neabilit	y of HX	Metals				
		Permeation-Permeability of HX Metals								Г			<u></u>											_ _	
		Select Measurement Technique-Tritium Permeation-Permeability of HX Metals	04-Feb-10			FL81600	FL81610	741.0d		4	Г	tMeasurer								vetais					
		Construct/Commission Test Facility-Tritium Permeation-Permeability of HX Metals	10-Jun-10	13-Oct-10		FL81600, FL81605		741.0d			- -	onstruct/Co								of HX N	letais				
		Measurement: IN 617-Tritium Permeation-Permeability of HX Metals	14-Oct-10	22-Jun-11	180.0d	FL81610	FL81620	741.0d				Meas	arement	: IN 617-1	ritium Pe	enneation	-Ferm	eabilit)	onexi	Metais					
	FL81620	Measurement: Hastelloy XR-Tritium Permeation-Permeability of HX Metals	23-Jun-11	29-Feb-12	180.0d	FL81615	FL81625	741.0d					Neasu	irement: R	lastelloy	XR-Tritiu	m Perr	nestio	n-Penno	sability c	of HX Me	tais			
	FL81625	Measurement: Alloy S00H-Tritium Permeation-Permeability of HX Metals	01-Mar-12	07-Nov-12	180.0d	FL81620	FL81630	741.0d				-	₽	Measure	ment: Al	юу 800Н-	Tiltium	Perm	eation-f	Permeat	bility of H	X Metals			
	FL81630	Measurement: T22-Tritium Permeation-Permeability of HX Metals	08-Nov-12	17-Jul-13	180.0d	FL81625	HT3510	741.0d				†	<u>†</u> ∙† ′ ≃⋷		leasuren	ient: T22	-T itiun	n Ferm	estion-	Permes	billty of H	IX Metals		 	
C.Q.	10.60.20 Materiak	6	01-Oct-07	30-Sep-20	3366.0d			1184.0d	—				┿┿━			+	-	+-	╺╋╋╋	┿┿				C.Q. 0.	.50.20 1
С.	Q.10.50.20.01 His	gh Temperature Metals	04-Aug-08	30-Sep-20	3153.0d			1184.0d					++			+	-	+-		┿┿				C.Q. 0	.50.20.0
	C.Q.10.50.20.01.0	01 Intermediate Heat Exchanger	04-Aug-08	30-Sep-20	3153.0d			1184.0d	-							-	-	+		╺┿╍┿				C.Q. 10	.50.20.0
	MAT0285	Procure 617 Heat for Testing	01-Sep-08*	12-Jan-09	96.0d		MAT0295, MAT0340, MAT0315	136.0d		Procure	617 Heat for	rTesting	11												
	MAT0290	Procure 800H for Testing	04-Aug-08*	15-Jun-09	226.0d		MAT0325, MAT0330	17.00	4	Pro	cure 800H fo	Testing	T.L				7								
		01.01.01 Testing for ASME Cose Case	01-Oct-08	30-Sep-20	3116.0d			1184.0d				1	++			1				+++				C.Q. 0.	.50.20.0
		Tensile Test Matrix for Sm Confirmatory Testing	13-Jan-09	30-Sep-10		MAT0285	MAT0300, MAT0335		l r	┙╋╋══		esile Test	Matrix fo	r Sm Cor	firmatory	Testing									
	MAT0300	Long Term Alloy 617 Creep Rupture Tests for Qualification	13-Jan-09	30-Sep-20	3057.0d	MAT0295		1184.0d	L 4															Long Te	erm Allo
								Page 37 of	55				ΠA	SK filter:	All Acto	/ties									
Remain	ning Level of Effor	rt Actual Work	Critical R	emaining W	ork		F	ageoroi	00					on met.	All AGU	11/20									

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		Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009	9 20	10	2011	2012	2013	201	4	2015	201	6 3	2017	2018	2019	9 20	20	2021	_
	MAT0305	Fatigue Tests to Support Design Cure development in 617 Code Case	04-Jan-10*	28-Sep-12	715.0d		MAT0310, MAT0335	5 17.0d		Π	4			FP.	Fatigue 1	rests to 8	Support	t Design	Cune d	evelop	mert ir	1617 Cod	e Case		T		
	MAT0310	Creep-fatigue Test Matrix to Support Interaction Diagram	04-Jan-10	28-Sep-12	715.0d	MAT0305	MAT0335	17.0d		++	-				Creep-fa	ligue Tes	st Matri	ix to Supp	port int	eracilo	n Diegi	rain				1	
	MAT0315	Test Matrix to Determine "C" Factor in Multiaxial Creep Rupture Strength Criterion for 617	02-Jun-09	31-Aug-10	326.0d	MAT0285	MAT0335	560.0d		┝╋═		Test	Matrix to	Delemi	ine "C" Fa	sctor in N	fulfilaxia	al Creep	Ruptur	e Stren	gth Cr	iterion for	617				
	MAT0320	Test Matrix to Address Creep-fatigue Saturation with Hold Time	01-Oct-08*	29-Sep-09	260.0d		MAT0335	800.0d	<u>a</u>		Test N	atrix to	Address (creep-fa	tigue Sat	uration w	ith Hok	d Time									
	MAT0325	Test Matrix for Strain Rate Effect on Yield and Tensile Strengths for 800H	04-Aug-09	30-Sep-09	42.0d	MAT0290	MAT0335	799.0d		╘	Test N	atrix fo	Strain Ra	ade Effec	t on Ylek	and Ter	nsle St	rengths f	tor 800	н							
	MAT0330	Test Matrix to Validate "C" Factor in Multiaxial Creep Rupture Strength Criterion	12-Oct-10	28-Sep-12	514.0d	MAT0290	MAT0335	17.0d				-			Test Mat	ntx to Val	idate "C	C" Factor	r in Mui	tianiai (Creep	Rupture S	trength C	riterion f	0 r 800H	1	
	MAT0335	Bubball Hot Data Complete for Code Case Bubmittal		28-0ep-12		МАТО295, МАТО295, МАТО305, МАТО310, МАТО325, МАТО325, МАТО320, МАТО320, МАТО320, МАТО340, МАТО350, МАТО350, МАТО355, МАТО356, МАТО340, МАТО400, МАТО4	06445	17.0d							IHX Data												
	C.Q.10.50.20	01.01.02 Determine Unified Constitutive	05-Jan-09	31-Aug-12	955.0d			37.0d		+				• •	C.Q.10.50	20.01.0	1.02 0	etermine	: Unific	sd Cana	stitur ive	: Nodel (L	JCM)				
	MAT0340	Tensile Test Matrix to Determine Strain Rate Sensitivity	01-Jun-09"	30-Sep-11	610.0d	MAT0285	MAT0345, MAT0335	5 37.0d					Te	insle Te	est Matrix	to Deterr	mine St	train Rate	e Sens	Hivity							
	MAT0345	Torsion Test Matrix for Validating Von Mises Criterion	01-Jun-09	30-Sep-11	610.0d	MAT0340	MAT0350, MAT0335	5 37.0d		¦==			Te	ision Te	est Matrix	for Valid	ating V	on Mises	s Criter	lon							
	MAT0350	Stress Dip Test Matrix	01-Jun-09	30-Sep-11	610.0d	MAT0345	MAT0355, MAT0335	5 37.0d		╘╼┏═			st	ress Dip	Test Ma	titx											
		Test Matrix for Short-term Creep Test	01-Jun-09	31-Aug-12		MAT0350	MAT0360, MAT0335								Test Matr		ort-term	n Creep T	lest	++							-
	MAT0360	Test Matrix for Unlaxial Ratcheting Tests	01-Jun-09	30-Sep-11	610.0d	MAT0355	MAT0365, MAT0335	5 277.0d		- -			Те	st Matri	x for Unia	atal Rate	heting "	Tests									
	MAT0365	Test Matrix for Torsional Cycling with Constant Axial Strain	01-Jun-09	30-Sep-11	610.0d	MAT0360	MAT0370, MAT0335	5 277.0d		5			I		x for Tors				ant Axi	al Strai	n						
	MAT0370	Test Matrix for Loading-Unloading-Creep Sequence	01-Jun-09	30-Sep-11	610.0d	MAT0365	MAT0375, MAT0335	5 277.0d		┢╍═			Te	est Matri	x for Load	sng-Usio	ading-(Creep Se	quenc	-							
	MAT0375	Test Matrix for Thermomechanical Cycling	01-Jun-09	30-Sep-11	610.0d	MAT0370	MAT0380, MAT0335	5 277.0d		<u>-</u>			Те	st Matri	x for The	ind mesh	anical (Cycling									
	MAT0380	Test matrix for Creep Curves to Quality U	01-Jun-09	30-Sep-11	610.0d	MAT0375	MAT0385, MAT0335	277.0d		- L					x for Cree					***						1	
	MAT0385	Stress Relaxation Test Matrix for Qualifying UCM	01-Jun-09	30-Sep-11	610.0d	MAT0380	MAT0390, MAT0335	5 277.0d		5			31	ress Re	axation 1	lest Matr	rtx for G	Qualitying	UCM								
	MAT0390 MAT0395	Uniaxial Test on Thermally Aged 617 Creep-Fatigue Test Matrix for SMT	01-Jun-09 05-Jan-09*	30-Sep-11 30-Sep-11	610.0d 715.0d	MAT0385	MAT0400, MAT0335 MAT0335	277.0d 277.0d							est on Th Igue Test				ens								
	MAT0400	Specimens Tensile Tests Supporting UCM for Alloy 8	03-Aug-09	30-Sep-10	304.0d	MAT0390	MAT0335	538.0d				Тег	islie Test														
		01.01.03 Determine Creep Mechanism	03-Nov-08		292.0d		-	733.0d	7		- C.O	10.50.	20.01.01.0	B Dete	rmine Cre	ep Mech	arism	+		++						1	
		Test Matrix for Interrupted Creep Tests		31-Dec-09		MAT0410	MAT0335	733.0d					for Intern			i I i											
				30-Sep-09	238.0d		MAT0405, MAT0415, MAT0335	733.0d	کے ا		r		Explore C			111	617										
	MAT0415		03-Nov-08	30-Sep-09	238.0d	MATD410	MAT0335	799.0d	اسم		Test N	atrix to	Explore C	ireep Me	echanism	s o' Alloy	(800H										
								Page 38 of 5	5					н Т А	SK filter	· All Act	lyttles									ш	_
ain	ing Level of Eff	ort Actual Work	Critical R	emaining We	ork			age of or o	nw								1000										

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LOIG	ATED PLANNING	00112															-2						
	Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009	2010	2011	2012	2013	3 20	14 2	015	2016	; ;	2017	2018	2019	2020	20
C.Q.10.50.20	01.01.04 Welding Properties and Procedu	01-Oct-08	30-8ep-11	768.0d			277.0d	╧╶╤╧			-	b .10.50	1.20.01.0	1,04 Wei	dino Proc	ertles a	and Pro	oce du				<u> </u>	<u> </u>
	Test Matrix to Determine Weld Strength	01-Oct-08*	27-Feb-09	108.0d		MAT0425, MAT0335		<u> </u>	Test Mab	rix to Deter										·			
	Rupture Factor																						
	Creep-Fatigue Tests for Alloy 617 Welds	01-Oct-08	30-Sep-11		MAT0420	MAT0335	277.0d				c			ts for Allo									
	01.01.05 Determine Effect of Aging	01-Oct-08	28-Sep-12	1028.0d			17.0d			lects o Fra			C.Q.10.	50.20.01	01.05 De	termine	: Effec	to A	ing				
MAT0430	Aging Effects o Fracture Toughness of 617 Wrought Metal	01-Oct-08*	27-Feb-09	108.0d		MAT0435, MAT0445, MAT0335		چ ۲			L												
MAT0435	Aging Effects on Fracture Toughness of GTA Weld from Filler Metal 617	01-Oct-08	27-Feb-09	108.0d	MAT0430	MAT0445, MAT0335	5 147.0d		Aging Eff	lects on Fr	cture Tou	ighness	of GTA \	Veld from	Filer Me	tal 617							
MAT0440	Aging Effects on Fracture Toughness of SMA Weld from Weld Electrode 117	01-Oct-10*	28-Sep-12	521.0d		MAT0335	17.0d			0			Aging E	flects on	Fracture	Toughne	ess of	SNA	Veid fro	n Weld El	ectrode 11	7	
MATD445	Uniaxial Tests on Thermally Aged 617 to Support UCM	01-Jun-09	31-Aug-11	588.Dd	MAT0435, MAT0430	MAT0450, MAT0335	82.0d		╘╼┎═══			ilandal Te	sts on Ti	nermally /	Aged 617	to Bupp		5M					
MAT0450	Thermal Aging Test Matrix for Strength Reduction Factors	05-Oct-09	29-Jun-12	715.0d	MAT0445	MAT0335	82.0d		╘┲			т т	nermal A	ong Test	Matrix fo	r Streng	th Red	suetibe	Factors				
C.Q.10.50.20	01.01.05 Determine Effect of Grain Size	03-Nov-08	30-8ep-09	226.0d			799.0d	-	C .0	2.10.50.20	01.01.06	Determi	ine Effec	t of Grain	Size								
	Test Matrix to Explore Creep Mechanisms of 617	03-Nov-08*		238.0d		MAT0460, MAT0335		_م		st Matrix to													
MAT0460	Test Matrix for Determining Grain Size Rupture Factors for 617	03-Nov-08	30-Sep-09	238.0d	MAT0455	MAT0335	799.0d	······t	Те	st Matrix fo	Determi	ning Gra	in Size R	upture Fi	actors for	617		+					
C.Q.10,50.20	01.01.07 Determine Environmental Effects	01-Oct-08	30-8ep-11	768.0d			277.0d	-			- c	0.10.50	.20.01.0	1.07 Det	ernine Er	wingan	ental E	Effects					
	Creep-Fatigue Tests for 617 Welds	01-Oct-08*	30-Sep-11	783.0d		MAT0490.	277.0d	à			i iii			ts for 617									
MAT0470	Creep-Fatigue Test Matrix for SMT	14-Jan-09	30-Sep-11	708.0d	MAT0465	MAT0470, MAT0335 MAT0475.	; 277.0d	L			-	reen-Fat	- loue Tes	t Matrix 1	ar aMT 8	pedimer							
MAT0475	Specimens	14-Jan-09	30-Sep-11		MAT0470	MAT0490, MAT0335 MAT0480,	277.0d	Ľ			[],		-	uppert Be		·		_	17 Code				
	Development in 617 Code Case				MATD475	MAT0490, MAT0335	5	د_													-		
MAT0480	Determination of Creep-Fatigue Interaction Diagram	14-Jan-09	30-8ep-11		MA10475	MAT0490, MAT0335									o ouppon	Determ	inatio		ceprrau	igue Intera	ction Diag	ram	
	.01.01.08 NRC Concerns	01-Oct-09	30-Sep-11	522.0d			677.0d		-			0.10.50			C Concer								
MAT0485	Tube Burst Tests for Alloy 617 and Alloy 800H	01-Oct-09*	30-Sep-11	522.0d		MAT0490	677.0d		<u>a</u>			ube Burs	st Tests 1	of Alloy 6	17 and A	loy 800	н						
MAT0490	IHX Input to NRC Complete		30-Sep-11	0.0d	MAT0485, MAT0465, MAT0470, MAT0475, MAT0480	PM310	677.0d				└=● ⊪	ist Input 1	to NRC (Complete									
C.Q.10.50.20.01	.02 RPV Cooled Vessel Option	01-Oct-08	16-Apr-18	2474.0d	ANATHUTE MATHUOR		1826.0d	-						+++	_		+		_	C.Q.1	0.50.20.0	1.02 RFV	/ Co
MAT0495	Acquire Heavy Section A 508 Forging	01-Oct-08*	18-Jun-09	180.0d		MAT0500, MAT0505, MAT0525, MAT05260.	77.0d	<u> </u>	Acqui	re Heavy S	ection A 9		ing										
MAT0500	Creep Rupture Test In Air A 508	19-Jun-09	11-Sep-09	60.0d	MAT0495	MAT0620. MAT05 MAT0866	497.0d		- Cre	ep Ruptur	Testin /	NF A 508											
MAT0505	Long Term Creep Behavior A 508	19-Jun-09	12-May-11	480.0d	MAT0495	MAT0855	77.0d		-					NID A SI	18								
MAT0510	Determine Stress Relaxation Behavior A	19-Jun-09	10-Sep-09		MAT0495	MAT0515	453.0d		- Det														
MAT0515	Determine Stress Relaxation Behavior of Fatigued Damaged A 508	11-Sep-09	03-Dec-09	60.0d	MAT0510	MAT0855	453.0d		╵┶҇Ҵ┈	Determine	tress Re	laxation i	Behavior	df Fatigu	ed Dama	ged A 5	iD8						
MAT0520	Determine Baseline Tensile Properties A	19-Jun-09	10-Sep-09	60.0d	MAT0495	MAT0866	513.0d		- Det	termine Ba	seline Ter	islie Prop	perties A	508									
MAT0525	Cyclic Stress-strain Curves A 508	19-Jun-09	10-Sep-09	60.0d	MAT0495	MATD866	513.0d		- Cyc	clic Stress	strain Cur	ves A 50	8	1									
MAT0530	Long Term Thermal Aging A508	07-Dec-10	13-Jun-16	1440.0d	MAT0495, MAT0680	MAT0535, MAT0540, MAT0545	1826.0d			•••						+	-	.org T	erm The	mai Agin	g A508		
MAT0535	Determine Baseline Tensile Properties A	14-Jun-16	23-Jan-17	160.0d	MAT0530	MAT0867	2146.0d					1					┝╋═╸		Determin	e Baselin	e Tenslie P	Properties	A 5
MAT0540	Baseline Toughness Measurements A 508	14-Jun-16	23-Jan-17	160.0d	MAT0530	MAT0867	2146.0d		L		L						l=			Toughnes			
MAT0545	Determine Stress Relaxation Behavior A	14-Jun-16	23-Jan-17		MAT0530	MAT0550	1826.0d		1		1			TTT		- T	4			e Stress i			
MAT0550	Toughness of Stress Relieved A 508	24-Jan-17	04-Sep-17		MAT0545	MAT0555	1826.0d											4	1	ughness	of Stress F	(elleved A	, 508
MAT0555	Toughness of Fatigue Damaged Stress Relieved A 508	05-Sep-17	16-Apr-18	160.0d	MAT0550	MAT0867	1826.0d													Toug	hness of F	atigue Da	mag
and evel of Str	: ad Actual Miack	Critical P	amaining Mis	~		F	Page 39 of 5	5	•		•	TA	SK filte	r: All Act	lvitles			•••		•			_
g Level of Effo	ort Actual Work	Chocal R	emaining Wo																				

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	A statistical data and a statistica. N	24	Et al.	S 1	-		Table 1 Min 1																-
	Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009	2010	2011	2012	2013	2014	2019	· ·	2016	2017	201	8 2019	202		20
MATOS	50 Shielded Metal Arc Welding A 508	19-Jun-09		0.06	MAT0495	MAT0565, MAT0570, MAT0575,	453.0d	-	🗢 Shleid	ed Neta	i Arc Weldir	A 508			[_	_		Ι
MATOS	55 Determine Baseline Tensile Properties A 508 Shielded Metal Arc Weld	19-Jun-09	10-Sep-09	60.0d	MAT0560	MATDEON MATDEON MATD855	513.0d			ermine B	sseline Ter	islie Prope	rties A \$00	Shleid	d Metal /	rc Wel	•						I
MATOS	70 Creep Rupture Test in Air Fatigue Damaged Material A 508 shielded Metal	19-Jun-09	10-Sep-09	60.0d	MAT0560	MAT0866	513.0d			ep Rupó	ure Test in /	Vr Fatigue	Damaged	Materia	A 508 st	leided	Metal A	c Weld					ľ
MATOS	A and I blind and	19-Jun-09	10-Sep-09	60.06	MAT0560	MAT0866	513.0d		•	ep Rupt	ure Test in /	NF A 508 8	hielded M	etal Arc	Veld								
MATOS		19-Jun-09	10-Sep-09	60.06	MAT0560	MAT0585	453.0d			ermine S	iress Relax	ation Beha	vior A 908	Shleida	d Metal A	nc Wel	a						
MATOS		11-Sep-09	03-Dec-09	60.08	MAT0580	MAT0856	453.0d		╎┕┓	etermin	e Stress Re	laxation Be	havior of i	atigued	Damage	4 A 508	8 Shield	d Metal	l Arc Wei	d			
MATOS	SO Long Term Thermal Aging Shielded Metal Arc Welding	07-Dec-10	13-Jun-16	1440.0d	MAT0560, MAT0680	MAT0595, MAT0600, MAT0605	1826.0d			-			_					Term T	ihe mai A	ging Shiek	ied Metal.	Arc We	:
MATOS	-	14-Jun-16	23-Jan-17	160.0d	MAT0590	MAT0867	2146.0d				1†	·			·†	<u>†</u> ⊧		Deterr	nine Bas	eline Tensi	e Propert	es A 50	0
MATOS		14-Jun-16	23-Jan-17	160.0d	MAT0590	MAT0867	2146.0d									•	┝═╪	Basel	ne Tough	ness Mea	urements	A 508	
MATOS	05 Determine Stress Relaxation Behavior A 508 Shielded Metal Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0590	MAT0510	1826.0d									'	┢╤╪	Deterr	nine Stre	ss Relaxat	on Behav	or A 50	1
MATOS	10 Toughness of Stress Relieved A 508 Shielded Metal Arc Weld	24-Jan-17	04-Sep-17	160.0d	MAT0605	MAT0615	1826.0d										4		Toughne	ess of Stres	s Relieved	I A 508	4
MATOS	15 Toughness of Fatigue Damaged Stress Relieved A 508 Shielded Metal Arc Weld	05-Sep-17	16-Apr-18	160.0d	MATD510	MAT0867	1826.0d											║┝╞	-	oughness o	f Fatigue I	Camage	ł
MATOS	20 Submerged Arc Weld A 508	19-Jun-09		0.06	MAT0495	MAT0525, MAT0530, MAT0540.	453.0d		P Subm	ergell Ar	e Weld A Si	DB				1		<u> </u>					ľ
MATOS	25 Determine Baseline Tensile Properties A 508 Submerged Arc Weld	19-Jun-09	10-Sep-09	60.06	MAT0520	MATOR45 MATOR50	4068.0d		- Det	ermine B	aseline Ter	slie Prope	rties A 508	Subme	rged Arc	Weld							
MATOS	30 Determine Stress Relaxation Behavior A 508 Submerged Arc Weld	19-Jun-09	10-Sep-09	60.06	MAT0620	MAT0535	453.0d			ermine S	iress Relai	ation Beha	vior A 908	Subme	ged Arc	Veld							ľ
MATOS	35 Determine Stress Relaxation Behavior of Fatigued Damaged A 508 Submerged Arc Weld	11-Sep-09	03-Dec-09	60.06	MAT0630	MAT0866	453.0d			etermin	e Stress Re	laxation Be	havior of i	atiqued	Damage	4 A 508	8 Subrik	nged An	c Vield				
MATOS	40 Creep Rupture Test in Air Fatigue Damaged Material A 508 Submerged Arc	19-Jun-09	10-Sep-09	60.06	MAT0620	MAT0855	513.0d		• —	ep Rupt	ne Testin /	Vr Fatigue	Damaged	Materia	A 508 B	bmerg	ed Arc	Weld					
MATOS	45 Creep Rupture Test in Air A 508 Submerged Arc Weld	19-Jun-09	10-Sep-09	60.0d	MAT0620	MAT0866	513.0d		Cre	ep Rupti	ure Test in /	NFA 508 8	ubmerged	Arc We	d	†		<u>+</u> ++-					
MATOS	50 Long Term Thermal Aging A 508 Submerged Arc Weld	07-Dec-10	13-Jun-16	1440.0d	MAT0520, MAT0580	MAT0655, MAT0660, MAT0665	1826.0d			-						Г	Lor	Term T	ihe mai A	ging A 508	Submerg	ed Arc	ľ
MATOS	55 Determine Baseline Tensile Properties A 508 Submerged Arc Weld	14-Jun-16	23-Jan-17	160.0d	MATD650	MAT0867	2146.0d									•	┝═╪	Deterr	nine Bas	eline Tensi	le Propert	es A 50	1
MATOS	50 Baseline Toughness Measurements A 508 Submerged Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0650	MAT0867	2146.0d									•	┝═╪	Basel	ne Tough	iness Mea	urements	A 508	F
MATOS	55 Determine Stress Relaxation Behavior A 508 Submerged Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0650	MAT0570	1826.0d									'	┥╤╡	Deterr	nine Stre	ss Relaxat	on Behav	or A 50	-
MATOS	70 Toughness of Stress Relieved A 508 Submerged Arc Weld	24-Jan-17	04-Sep-17	160.0d	MAT0665	MAT0675	1826.0d				1					1	1		Toughne	ss of Stres	s Relieved	IA 508	1
MATOS	75 Toughness of Fatigue Damaged Stress Relieved A 508 Submerged Arc Weld	05-Sep-17	16-Apr-18	160.0d	MAT0570	MAT0857	1826.0d											║╘┥		oughness o	f Fatigue I	Jamag	ł
MATOS	80 Thermal Aging and Long-term Behavior Laboratory	05-Jan-10*	06-Dec-10	240.0d		MAT0550, MAT0590, MAT0530, MAT0280, MAT07	1826.0d		4		Thermal A	ging and L	ong-term t	lehavio	Laborato	a.							
aining Level	of Effort Actual Work	Critical R	emaining W	ork		P	age 40 of 5	5				TAS	K filter: A	II Activi	tles								

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	Activity Name	Start	Finish	Planned	Predecessors	Successors	Total Float	2008	2009 20	110	2011	2	012 2013	201	201	5	2016	2017	7	2018	2019	202	0
				Duration																			
MAT0685	Acquire Heavy Section A 533B Forging	01-Oct-08*	18-Jun-09	180.0d		MAT0590, MAT0595, MAT0715, MAT0750, MAT0810, MAT07	438.0d	4	Acquire	Heavy	Bection /	A 533	8 Forging										
MAT0690	Creep Rupture Test in Air A 533B	19-Jun-09	11-Sep-09	60.0d	MATD685	MAT0866	497.0d		- Creep	Rupti	ure Test i	n Alt7	A 5338										
MAT0695	Long Term Creep Behavior A 533B	19-Jun-09	02-Mar-15		MAT0685	MAT0867	2618.0d		-						Lo	ng Terr	n Creep	Behav	lor A 5	338			
MAT0700	Determine Stress Relaxation Behavior A 5338	19-Jun-09	10-Sep-09	60.06	MAT0685	MAT0705	453.0d		Deten	nine S	iness Re	ianatio	on Behavior A S	38									
MAT0705	Determine Stress Relaxation Behavior of Fatigued Damaged A 533B	11-Sep-09			MAT0700	MAT0855	453.0d		L		11		ation Behavior of		d Damage	A 53	38						
MAT0710	Determine Baseline Tensile Properties A 533B	19-Jun-09	10-Sep-09		MATD585	MAT0855	513.0d			1	11		e Properties A \$	38									
MAT0715	Cyclic Stress-strain Curves A533B	19-Jun-09	10-Sep-09		MATD585	MAT0866	513.0d		• Cyclic	Sires	s-strain C	Surves	A533B					<u> </u>					
MAT0720	Long Term Thermal Aging A533B	07-Dec-10	13-Jun-16		MAT0585, MAT0580	MAT0730, MAT0735	1826.0d			-						1	Lor				0 A533B		
MAT0725	Determine Baseline Tensile Properties A 5338	14-Jun-16	23-Jan-17		MAT0720	MAT0867	2146.0d											111	1		e Tensile		
MAT0730	Baseline Toughness Measurements A 53	14-Jun-16	23-Jan-17		MAT0720	MAT0867	2146.0d		1		11		i		1	ΙĽ		4-1	4		ss Measu		
MAT0735	Determine Stress Relaxation Behavior A 5338	14-Jun-16	23-Jan-17		MAT0720	MAT0740	1826.0d										1	Dete			Relaxation		
MAT0740 MAT0745	Toughness of Stress Relieved A 533B Toughness of Fatigue Damaged Stress Relieved A 533B	24-Jan-17 05-Sep-17	04-Sep-17 16-Apr-18		MAT0735 MAT0740	MAT0745 MAT0867	1826.0d 1826.0d			-+	++	+-		+		†	+	†† ⊂		Tough	of Stress hness of i	Fatigue I	u Ali Dan
MAT0750	Shielded Metal Arc Welding A 533B	19-Jun-09		0.06	MATD585	MAT0755, MAT0760, MAT0765,	453.0d		+ Shielder	Neta	Arc Wel	iding /	A 533B										
MAT0755	Determine Baseline Tensile Properties A 533B Shielded Metal Arc Weld	19-Jun-09	10-Sep-09	60.00	MAT0750	MAT0770 MAT0790 MAT0855	513.0d		• Deten	nine B	aseline 1	Tensik	e Properties A S	38 Shi	illed Meta	Arc W	veid						
MAT0760	Creep Rupture Test In Air Fatigue Damaged Material A 5338 shielded Metal	19-Jun-09	10-Sep-09	60.00	MAT0750	MATOB55	513.0d		- Creep	Rupt	ne Testi	n Alt P	Fatigue Damage	d Maberi	al A 5338	shielde	sc Meta	Arc We	ld				
MAT0765	Creep Rupture Test In Air A 533B Shielded Metal Arc Weld	19-Jun-09	10-Sep-09	60.06	MAT0750	MAT0855	513.0d		- Creep	Rupt	ine Test I	n Alr/	A 5338 Shielded	Netal A	rc Weld								
MAT0770	Determine Stress Relaxation Behavior A 5338 Shielded Metal Arc Weld	19-Jun-09	10-Sep-09	60.00	MAT0750	MAT0775	453.0d		Deten	nine S	iress Re	iaxatio	on Behavlor A 9	38 Shk	loed Meta	Arc W	/eid	†† 1					
MAT0775	Determine Stress Relaxation Behavior of Fatigued Damaged A 5338 Shielded Metai Arc Weld	11-Sep-09	03-Dec-09	60.00	MAT0770	MAT0866	453.0d			ennine	e Stress F	Relax	ation Behavior of	Fatigue	d Damage	e A 53	38 Shie	nded M	etai 🗤	c Weld			
MAT0780	Long Term Thermal Aging A533B Shielded Metal Arc Welding	07-Dec-10	13-Jun-16	1440.0d	MAT0750, MAT0680	MAT0785, MAT0790, MAT0795	1826.0d			-0						+	Lor	g Term	Them	nal Aging	a A533B	Shielded	1 14
MAT0785	Determine Baseline Tensile Properties A 5338 Shielded Metal Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0780	MAT0867	2146.0d										┥═╡	Dete	mine	Baseline	e Tensile	Propert	les,
MAT0790	Baseline Toughness Measurements A 5338 Shielded Metal Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0780	MAT0867	2146.0d										┥═╡	Base	line T	oughnes	ss Measu	rements	. Ne
MAT0795	Determine Stress Relaxation Behavior A 5338 Shielded Metal Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0780	MATOBOD	1826.0d			-+	1+	+-		1-1		†t		Dete	rmine	Stress F	Relaxation	n Behavi	ke)
MATOSOO	Toughness of Stress Relieved A 533B Shielded Metal Arc Weld	24-Jan-17	04-Sep-17	160.0d	MAT0795	MAT0805	1826.0d										4	╡	тац	ghness o	of Stress	Relieved	1A
MAT0805	Toughness of Fatigue Damaged Stress Relieved A 533B Shielded Metal Arc Weld	05-8ep-17	16-Apr-18	160.0d	MAT0800	MAT0867	1826.0d											-		Tough	hness of i	Fatigue I	Dan
MAT0810	Submerged Arc Weld A 533B	19-Jun-09		0.04	MATD585	MAT0815, MAT0820, MAT0830, MAT0835, MAT0841	453.0d		Submer	eel Ar	e Weld A	5338											
MAT0815	Determine Baseline Tensile Properties A 5338 Submerged Arc Weld	19-Jun-09	10-Sep-09	60.06	MAT0810	MAT0855	513.0d		• Deten	nine B	isseline 1	Tensik	e Properties A S	38 Sub	merged A	n: Weld	1						
MAT0820	Determine Stress Relaxation Behavior A 5338 Submerged Arc Weld	19-Jun-09	10-Sep-09	60.00	MAT0810	MAT0825	453.0d		P Deten	nine S	ittess Re	lanatio	on Behavlor A S	36 Sub	merged Ar	c Weld		11					1
							age 41 of 5		•				TASK filter:										_

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	Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009	2010	2011	2012	2013	2014	2019	; ;	2016	2017	7 21	018 2	2019	2020	202
MAT0825	Determine Stress Relaxation Behavior of Fatigued Damaged A 533B Submerged Arc Weld	11-Sep-09	03-Dec-09	60.0d	MAT0820	MAT0866	453.0d		-	etermine	Stress Re	laxation B	iehavior d	f Fatique	d Damage	I A 53	38 Subr	erged	Arc We	bid		Т	Т
MAT0830	Creep Rupture Test In Air Fatigue Damaged Material A 5338 Submerged Arc	19-Jun-09	10-Sep-09	60.0d	MAT0810	MAT0855	513.0d			ep Ruptu	re Test in /	Alr Fatigue	e Damag	d Materia	A 5338 :	lubme	rged Arc	Weld					
MAT0835	Creep Rupture Test In Air A 533B Submerged Arc Weld	19-Jun-09	10-Sep-09	60.0d	MAT0810	MAT0866	513.0d		- Cree	ep Ruptu	re Test in /	AIT A 5338	3 Submer	ged Arc V	Veld								
MAT0841	Long Term Thermal Aging A 533B Submerged Arc Weld	07-Dec-10	13-Jun-16	1440.0d	MATOS10, MATOS80	MAT0845, MAT0850, MAT0855	1826.0d								-		Lorg	Term	Thema	al Aging A	533B Su	bmerged	Antik
MAT0845	Determine Baseline Tensile Properties A 5338 Submerged Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0841	MAT0867	2146.0d				+	-+			+		-	Deter	rmi ne B	aseline Te	enslie Pro	sperties A	5338
MAT0850	Baseline Toughness Measurements A 5338 Submerged Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0841	MAT0867	2146.0d										┢═╪	Base	line To.	ughness N	Measurem	ients A 5	338 8
MAT0855	Determine Stress Relaxation Behavior A 5338 Submerged Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0841	MAT0860	1826.0d									4	┢╤╋	Deter	rmi ne 8	tress Rela	axation B	ahavlor A	. 533B
MAT0860	Toughness of Stress Releved A 5338	24-Jan-17	04-Sep-17	160.0d	MAT0855	MAT0865	1826.0d										4	⋕	Taugh	nness of S	Stress Rel	Jeved A f	:33E (
MAT0865	Submerged Arc Weld Toughness of Fatigue Damaged Stress Relieved A 533B Submerged Arc Weld	05-Sep-17	16-Apr-18	160.0d	MAT0860	MAT0867	1826.0d											║┕		Toughne	ss of Fat	igue Dam	aged
MATOB66	Data Support for NRC License Complete		12-May-11	0.04	MAT0500, MAT0505, MAT0515, MAT0520, MAT0520, MAT0525, MAT0555, MAT0555, MAT0555, MAT0555, MAT0545, MAT0545, MAT0560, MAT055,	PM220	78.0d				- Data	Support fr	IF NRC L	cense Co	mpiete								
MAT0867	NRC Aging Data Support Complete		16-Apr-18	0.04	МАТОВ45, МАТОВ50, МАТОВ55, МАТО7950, МАТО790, МАТО905, МАТО905, МАТО790, МАТО790, МАТО790, МАТО790, МАТО795, МАТО795, МАТО555, МАТО555, МАТО555, МАТО555, МАТО555, МАТО555, МАТО555, МАТО555, МАТО7957, МАТО555, МАТО555, МАТО7957, МАТО555, МАТО7957, МАТО7957, МАТО7957, МАТО7957, МАТО7957, МАТО7957, МАТО7957, МАТО955, МАТО955, МАТО955, МАТО955, МАТО955, МАТО955, МАТО955, МАТО955, МАТО955, МАТО955, МАТО955, МАТО955, МАТО955, МАТО955, МАТО955, МАТО795, МАТО955, МАТО795, МАТО955, МАТО795, МАТО955, МАТО795, МАТО95, МАТО95, М		1826.0d												4	NRC Agi	ng Data (Jupport C	omeik
C.Q.10.50.20.02	Graphite Core Component Materiais	01-Oct-07	29-Mar-18	2711.0d			1839.0d											╎┤──┤		C.Q.10.50	0.20.02 0	Braphite 🤅	Sore (
	02.01 Baseline Characterization	07-Apr-08	08-Mar-16	2040.0d			2375.0d	-			1	-			1	-	C.Q.10	50.20	02.01 E	Baseline C	Characteri	zation	
MAT0870	Procure Graphite	07-Apr-08*	02-Jun-08	41.0d		MAT0875	272.0d		ure Graphite		<u> </u>							ļļ					
MAT0875	Initiate Multi-axial Graphite Testing	03-Jun-08			MAT0870	MAT0965	272.0d	🔶 initia	ste Multi-axial														
MAT0965 MAT0970	Initiate Inter-Billet Characterization Continue Inter-Billet Characterization	03-Jun-08 01-Jan-10	31-Dec-09 30-Jun-11		MAT0875 MAT0965	MAT0970, MAT0980 MAT0975, MAT0990, MAT1005	272.0d 272.0d			nitiate int	1	tinue inter		anacteriz	ation								
MAT0975	Finish Inter-Billet Characterization	01-Jul-11	28-Dec-12	391.0d	MAT0970	MAT1115	924.0d				-	-	Finish	inter-Bille	t Characte	ization							
MAT0980	Procure New Graphite	03-Jun-08	29-May-09	259.0d	MAT0965		4142.0d	6-	Procure	e New Gr	aphite												
MAT0990	Initiate Intra-Billet Characterization	03-Jan-11	29-Jun-12	390.0d	MAT0970	MAT0995, MAT1040, MAT1005	272.0d					init	late intra	Billet Cha	acterizati	on	1	TT					-1
MAT0995	Continue Intra-Billet Characterization	02-Jul-12	01-Jan-14	393.0d	MAT0990	MAT1000, MAT1055							_	Conti	nue Intra-B	llet Ci	aracteri	zation					
MAT1000 MAT1005	Finish Intra-Billet Characterization Procure New Graphite	02-Jan-14 02-Jul-12	30-Jun-15 27-Jun-13		MAT0995 MAT0990, MAT1040, MAT0970	MAT1115	272.0d 3078.0d						— f		w Graphit	Finish	intra-Bill	el Chai	racteriza	ation			
MAT1040	Initiate Lot-to-Lot Characterization	03-Jan-11	29-Jun-12	390.0d	MAT0990	MAT1045, MAT1005	272.0d			L _{=C}		init	iate Lot-it	-Lot Cha	racterizatio	n							
MAT1045	Continue Lot-to-Lot Characterization	02-Jul-12	01-Jan-14	393.0d	MAT1040	MAT1050, MAT1055	272.0d					-			nue Lot-to-		aracteria	ation					
							age 42 of 5						SK filter:	All A all.									

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	Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009	2010	2011	2012	2013	201	4 201	5 2	016	2017	2018	2019	202	0
MAT1050	Finish Lot-to-Lot Characterization	02-Jan-14	30-Jun-15	389.0d	MAT1045	MAT1115	272.0d					T	ŀ			Finish L	ot-to-L	dt Chara	cterization			
MAT1055	Procure New Graphite	02-Jan-14	30-Dec-14	259.0d	MAT0995, MAT1045		2685.0d						ų		P 100	ure New	Graph	ee				
MAT1115	Graphite Modeling	01-Jul-15	15-Dec-15	120.0d	MAT0975, MAT1000, MAT1050	MAT1120	272.0d									G G	aphite I	Nodelling	2			
MAT1120	Prepare Data Packages	16-Dec-15	08-Mar-16	60.0d	MAT1115	8E530	272.0d									-	Prepare	Data P	actages			
Q.10.50.20	02.02 Irradiation Characterization	01-Oct-07	29-Jun-16	2256.0d			191.0d									+				adiation Ci	aracteri	zetio
C.Q.10.50.	20.02.02.01 AGC-1 (900 C 4dpa)	01-Oct-07	07-Jun-11	935.0d			280.0d				C.Q.	10.50.20.0	12.02.01	ABC-1 (900 C 4dp	•		i				
MAT114	0 AGC-1 Design/Fab	01-Oct-07	31-Mar-09	377.0d		MAT1145, MAT1165	7.0d		AGC-1	Design/Fat						1						
MAT114	IS AGC-1 Irradiation	01-Apr-09	26-Aug-09	105.0d	MAT1140	MAT1150, MAT1170	54.0d			C-1 Irradia	tion					1						
MAT115	0 AGC-1 Imadiation Cool/Trans	27-Aug-09	24-Feb-10	123.0d	MAT1145	MAT1155	345.0d		- - i	AGC-1 In	rediation (col/Tran										
MAT115	5 AGC-1 PIE	08-Jun-10	07-Jun-11	254.0d	MAT1150, MAT1370	MAT1160	272.0d			H=-[AGC	PIE	1			1	 -	††				
MAT116	0 AGC-1 Complete		07-Jun-11	0.0d	MAT1155	MAT1375, 8E455	280.0d				AGC	Comple	te									
C.Q.10.50.	20.02.02.02 AGC-2 (900 C 7dpa)	01-Apr-09	14-Jun-12	837.0d			13.0d					C.0	.10.50.2	0.02.02.0	2 AGC-2	(900 C 7	dpa)					
MAT116	55 AGC-2 Design/Fab	01-Apr-09	30-Oct-09	152.0d	MAT1140	MAT1170, MAT1190	7.0d		⊨ ∧	3C-2 Desi	on/Fab	1			1	1						1
MAT117	0 AGC-2 Imadiation	02-Nov-09	15-Dec-10	285.0d	MAT1165, MAT1145	MAT1175, MAT1195	7.0d				AGC-2 Int	diation				1						
MAT117	5 AGC-2 Irradiation Cool/Trans	16-Dec-10	15-Jun-11	130.0d	MAT1170	MAT1180	14.0d				AGC	Irradiat	ion Cooli	Trans		1	 -	Ti				1
MAT118	AGC-2 PIE	16-Jun-11	14-Jun-12	253.0d	MAT1175, MAT1370	MAT1185	13.0d					AG	C-2 PIE									
MAT118	85 AGC-2 Complete		14-Jun-12	0.0d	MAT1180	MAT1375, 8E455	13.0d					AG	C-2 Com		1	1						1
C.Q.10.50.	20.02.02.03 AGC-3 (600 C 4dpa)	02-Nov-09	09-Nov-12	790.0d			7.0d				1		C.Q.10.	0.20.02	02.03 AG	G-3 (60)	C 4dp	e 3				
MAT119	0 AGC-3 Design/Fab	02-Nov-09	01-Apr-10	102.0d	MAT1165	MAT1195, MAT1215	190.0d		┕╼┎═	AOC-3	Design/Fa	b				1						
MAT119	95 AGC-3 Imadiation	16-Dec-10	19-May-11	105.0d	MAT1190, MAT1170	MAT1200, MAT1220	7.0d			L	AGC	3 Irradiati	on			1	1	TT T				1
MAT120	0 AGC-3 Irradiation Cool/Trans	20-May-11	09-Nov-11	123.0d	MAT1195	MAT1205	7.0d				÷— /	VBC-3 line	diation C	cel/Tra	s	1						
MAT120	15 AGC-3 PIE	10-Nov-11	09-Nov-12	254.0d	MAT1200, MAT1370	MAT1210	7.0d						AGC-3	16		1						
MAT121	IO AGC-3 Complete		09-Nov-12	0.0d	MAT1205	MAT1375, 8E455	7.0d					_ _ _	AGC-3	Complete		1		i				
C.Q.10.50.	20.02.02.04 AGC-4 (600 C 7dpa)	02-Apr-10	27-Feb-14	1020.0d			100.0d			,				- c.(2.10.50.20	02.02.0	4 AGC	4 (600	C 7dpa)			
MAT121	15 AGC-4 Design/Fab	02-Apr-10	02-Nov-10	152.0d	MAT1190	MAT1220	235.0d		4	<u> </u>	BC-4 Des	ign/Fab				T		TT T				1
MAT122		20-May-11	27-Jul-12			MAT1225, MAT1245				'	*	A	3C-4 Irra			1						
	25 AGC-4 Irradiation Cool/Trans	30-Jul-12	27-Feb-13		MAT1220	MAT1230	99.0d					╺╺	AGC		tion Cool/1	lians						
	AGC-4 PIE	28-Feb-13			MAT1225, MAT1370		99.0d							금 산	C-4 PIE	1						
	S AGC-4 Complete		27-Feb-14		MAT1230	MAT1375, 8E530	100.0d				ili			- A6	C-4 Comp			<u> </u>				
	20.02.02.05 AGC-5 (1200 C 4dpa)		23-Oct-14	627.0d			180.0d				1	• • • •			C.Q.10	0 50 20 (2.02.05	AGC-	5 (1200 C	4dpa)		
	AGC-5 Design/Fab	-	26-Nov-12		MAT1305	MAT1245, MAT1265						r	AGC-5		30	1						
MAT124	IS AGC-5 Imadiation	27-Nov-12	24-Apr-13	100.0d	MAT1240, MAT1220	MAT1250, MAT1255, MAT1270	173.0d						- .^9	C-5 intak	alion							
	AGC-5 Imadiation Cool/Trans	25-Apr-13	22-Oct-13		MAT1245	MAT1255	173.0d						4	AGC-5	AGC-9	Cool/Tr	ens					1
MAT129	S AGC-5 PIE	23-Oct-13	23-Oct-14	254.0d	MAT1245, MAT1250, MAT1370	MAT1260	173.0d						-		AGC-5	PIE						
MAT129	0 AGC-5 Complete		23-Oct-14	0.0d	MAT1255	MAT1375, LR365	180.0d			1	T 1	1			AGC 5	Comple	te 🛛	TT				1
C.Q.10.50.	20.02.02.06 AGC-6 (1200 C 7dpa)	27-Nov-12	29-Jun-16	937.0d			191.0d					🕈			+		Ŧ C.Q	10.50 2	0.02.02.06	AGC-6 (1	200 C 76	jpa(
	5 AGC-6 Design/Fab	27-Nov-12			MAT1240, MAT1305		183.0d					++	<u>-</u> !^		AGC-6	1						
MAT127		01-Jul-13	27-Oct-14			MAT1275, MAT1280							L= (i=t		AGC-6	5 Irradiat						Т
	75 AGC-6 Imadiation Cool/Trans	28-Oct-14	29-May-15		MAT1270	MAT1280	183.0d									/ GC-6 I	J	in Coci/	Trans			
MAT128	AGC-6 PIE	01-Jun-15	29-Jun-16	275.0d	MAT1270, MAT1275, MAT1370	MAT1285	183.0d								-	Г	AGO	-6 PIE				
	AGC-6 Complete	01-Jun-09	29-Jun-16 29-May-12	0.0d 782.0d	MAT1280	8E530, LR365	191.0d 807.0d						10.00		HTV-1/-	ب 2 (900, 1	I. I	- Com	plete 6 to 4.8dpc			
	20.02.02.07 HTV-1-2 (900, 1200, 1500 C 1 0 HTV-1/-2 Design/Fab	01-Jun-09"	29-May-12 31-May-10	253.0d		MAT1295	173.0d			HTM	-2 Besig		10.50.20		110-10-	2(900,1	200, 15		o .o 4.80pt	.,		1
MAT 123		01-Jun-10	30-Nov-10		MAT1290	MAT1200	173.0d															1
	0 HTV-1/-2 Irradiation HTV-1/-2 Irradiation Cool/Trans	01-Dec-10			MAT1295	MAT1305	173.0d					102 1400	ation Sec		·· -	+	 ·					
	05 HTV-1/-2 PIE	31-May-11	-		MAT1295 MAT1300	MAT1305 MAT1240.	173.0d						2000 (409 14/-2 (416									1
		21-mag*11				MAT1265, MAT1310						Γ										
	ID HTV-1/-2 Complete		29-May-12	1	MAT1305	MAT1375	807.0d	5				L	-1/-2 Cor SK filter:		dtion			1				1
Level of 8	Effort Actual Work	Critical R	emaining Wo	rk		P	-age 45 of 5	0					an mer:	AI ACO	шеь							

NGNP INTEGRATED SCHEDULE DEVELOPMENT PLAN

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NGNP INTEGRATED PLANNING SCHEDULE 9-29-2008 Activity ID 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2022 202 Activity Name 8tart Finish Planned Predecessors Successors iotal Float 2021 Duration C.Q.10.50.20.02.02.08 PIE Facility Preparation 04-Feb-08 07-Jun-10 584.0d 280.00 C.Q.1 50,20.02.02.08 MAT1315 Initiate/Plan PIE Facility 04-Feb-08" 31-Dec-08 238.0d MAT1320 280.00 Initiate/Plan PIE Facili MAT1325, MAT1340 MAT1320 Prepare Lab Space 01-Jan-09 15-Jun-09 118.0d MAT1315 MAT1330 280.0 Prepare Lab Spa -53.0d MAT1315 MAT1330 345.0d Spec Containment Area MAT1325 Spec Containment Area 01-Jan-09 16-Mar-09 - install Containment Area in Labs MAT1330 Install Containment Area in Labs 16-Jun-09 12-Oct-09 85.0d MAT1325, MAT1320 MAT1335 280.0d 280.00 Install Equipmet in Containment Area MAT1335 Install Equipmet In Containment Area 13-Oct-09 12-Apr-10 130.0d MAT1330 MAT1365 Pre-inidiation Facility Pieps MAT1340 Pre-Initiation Facility Preps 04-Feb-08 06-Oct-08 176.0d MAT1315 MAT1345, MAT1350 535.0d MAT1345 Pre-Imidiation Equipment Purchase 07-Oct-08 20-Apr-09 140.0d MAT1340 MAT1350 535.0d MAT1350 Install & Check-out Equip in Pre-irridiation 07-Oct-08 20-Apr-09 140.0d MAT1345, MAT1340 MAT1365 535.0d - Install Check-ou Equip in Pre-Irridiation Labratory MAT1365 System Checkout 13-Apr-10 10-May-10 20.04 MAT1350 MAT1335 MAT1320 280.0 System Checkout Integrated System Testing MAT1370 Integrated System Testing 11-May-10 07-Jun-10 20.04 MAT1365 MAT1155 280 Dd MAT1180 MAT1205 MATING MATIN C.Q.10.50.20.02.03 Material Properties Modeling 450.0d 180.0d C.Q. 10.50.20.02.03 Material Properties Modelin 24-Oct-14 14-Jul-16 Baseline Characterization Response MAT1375 Baseline Characterization Response 24-Oct-14 26-Feb-15 90.0d MAT1310. MAT1380 180.0d MAT1260 MAT1235, MAT1210 MAT11 MAT1380 Model Non-Irradiated Response of Whole 27-Feb-15 05-Nov-15 180.0d MAT1375 MAT1385 180.0d irradiated Response of Whole Core Model No Core MAT1385 irradiated Model of Whole Core 06-Nov-15 14-Jul-16 180.0d MAT1380 8E530 180.00 Irradiated Model of Whole Core 636.00 C.Q.10.50.20.02.05 Graphite I C.Q.10.50.20.02.05 Graphite Lots 01-Oct-07 29-Mar-18 2711.0d MAT1455 614.0d Down select 1 Graphite Type MAT1450 Down select 1 Graphite Type 01-Oct-07 0.0d MAT1455 Graphite Specification 01-Oct-07 30-Sep-08 253.0d MAT1450 MAT1460, MAT1465 614.00 Graphite Specification Vendor (QA) Qualification MAT1460 40.0d MAT1455 MAT1475 703.00 Vendor (QA) Qualification 30-Sep-08 25-Nov-08 Prepare Graphite Procurement Package MAT1465 Prepare Graphite Procurement Package 30-Sep-08 08-Apr-09 129.0d MAT1455 MAT1470 614.0d MAT1470 Graphite Procurement initiated 08-Apr-09 0.0d MAT1465 MAT1475 614.0d Graphite Procurement Initiated MAT1475 Produce Graphite Lot (Lot duration = 9 08-Apr-09 17-Dec-09 180.0d MAT1460, MAT1470 MAT1480 614.00 Produce Graphite Lot (Lot duration = 9 mo/Core = 3 yrs) mo/Core = 3 yrs) MAT1480 NOI to Procure Fuel Element & Reflector 20-Sep-12 22-Aug-13 240.0d MAT1475 MAT1485 636.00 NOI to Procure Fuel Element & Reflector Grant Graphite MAT1485 Fuel Element & Reflector Graphite Qual ... 22-Aug-13 25-Jun-15 480.0d MAT1480 MAT1490 636.0d uel Element & Reflector Graphite Qual Specs MAT1490 Production & Machine Fuel Element & 25-Jun-15 29-Mar-18 720.0d MAT1485 FC165 636.0d Production & Machine Fuel Element & Reflector Graph Reflector Graphite 2469.00 01-Oct-07 29-Oct-15 2081.0d C.O 10.50 30 Method C.Q.10.50.30 Methods Matched - Index - Refrac, [MIR MTH195 1354.00 MTH100 Matched - Index - Refrac, (MIR) 01-Oct-08" 30-Sep-11 760.0d 9 Intron Thermal Fluids Couple Gode Development/Validation 734.00 MTH105 Introl Thermal Fluids Couple Code 01-Oct-07 22-Apr-11 900.0d MTH110 evelopment/Validatio MTH110 V&V Intrgri Thermal Fluids Code 25-Apr-11 24-Jun-13 550.0d MTH105 NH8755 734.0d VSV Intror termai Fluids Code Differential Data -PU239 Demo MTH130, MTH120 930.0d Differential Data -PU239 Demo Measurements MTH115 01-Oct-08" 25-Sep-09 250.0d $\overline{\mathbf{a}}$ Measurements MTH120 Differential Data -PU239 Measurements 28-Sep-09 22-Sep-10 250.0d MTH115 MTH125 1055.0d Differential Data -PU239 Measurement Differential Data -PU242 Measuremen F MTH125 Differential Data - PU242 Measurements 23-Sep-10 16-Sep-11 250.0d MTH120 MTH135 1055.00 500.04 MTH115 MTH135 930.04 Differential Data Code Development MTH130 Differential Data Code Development 28-Sep-09 16-Sep-11 250.0d MTH125 MTH130 NH8755 930.0d Differential Data Code V&V MTH135 Differential Data Code VAV 19-Sep-11 12-Sep-12 Air ngress -Stratified Row Experiments MTH140 Air Ingress -Stratified Flow Experiments 01-Oct-08* 22-Sep-10 500.0d 3738.0d $\overline{\mathbf{a}}$ MTH145 Air Ingress -Adv Graphite Oxidation studies 01-Oct-07 21-Sep-09 500.0d MTH150, MTh155 774.0d Air Ingress -Adv Graphite Oxidation studies MTH150 630.0d MTH145 NH8755 1174.0d Air ingress -Integral Air ingress Studies Air ingress -Integral Air ingress Studies 06-Apr-09 26-Sep-11 MTh155 Air ingress -Stratified Flow Code 06-Apr-09 25-Mar-11 500.0d MTH145 MTH165, MTH160 774.00 Air incress -Stratified Flow Code Developm Development Air Ingress -Stratified Flow Code Va MTH160 Air Ingress -Stratified Flow Code V&V 01-Jun-09 07-Mar-12 700.0d MTb155 MTH195 1188.0d NH8755 774.0d Vay Thermal Fluids MTH165 750.0d MTh155 V&V Thermal Fluids 13-May-10 29-Apr-13 MTH175 329.0d MTH170 RCCS: Design 01-Oct-08" 22-Sep-10 500.0d $\overline{\alpha}$ RCCS: Design Page 44 of 55 TASK filter: All Activities Remaining Level of Effort Actual Work Critical Remaining Work Actual Level of Effort Remaining Work Start Constraint (c) Primavera Systems, Inc

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	Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009	2010	2011	2012	2013	20	014 2	015	2016	20	17	2018	2019	2020	20	121
MTH175	RCCS: Build Exper. & Start Fac	23-Sep-10	16-Sep-11	250.04	MTH170	MTH180	329.0d					RCCS: Bu	uld Exper	S Star	Fac		_	-		1				_
MTH180	RCC8: Perform Experiments	19-Sep-11	15-Mar-13		MTH175	MTH190	329.0d								form Expe	riments				+				
MTH185	RCCS: Code Development	28-Oct-10	17-Oct-12	500.0d		MTH190	329.0d			_		- 6	.		evelopmen				1 1					
MTH190	RCCS: Code VAV	18-Oct-12	14-Oct-13		MTH180, MTH185	MTH195	329.0d			_		믄			B: Code V				1 1	i				
MTH195	Complete Separate Effects Validation	22-Apr-13	22-Jun-15		MTH160, MTH165	NH8755	329.0d					-6	-i		5. COUE V			er arate i	Warte	Validatio				
MILITIZZ	complete deparate Ellects validation	22-701-13	22-0011-15		MTH190	NH0/35	325.00							111		Com	piese of	ep ar aver	eneca	vanuau	211			
MTH200	Adv. Cross Section Methods 38M	01-Oct-07	30-Sep-09	507.0d		MTH210, MTH235, MTH240, MTH220	264.0d			Adv. Cross	Section N	lethods 38	BM											
MTH205	Stand alone Hex-Z Solver Code	01-Oct-07	30-Sep-08	254.0d		MTH245, MTH210, MTH225, MTH215, MTH276	80.0d		Stand alo	ne Helx-Z So	ver Code							-						
																			1 1					
MTH210 MTH215	Couple Hex-Z Solver to SSM Hex-Z Nodal Depletion w/BC	01-Oct-09 01-Oct-08	30-Sep-10 30-Sep-09		MTH200, MTH205 MTH205	MTH250, MTH276 MTH255, MTH220.	271.0d 264.0d			Hex Z Noda		x-Z Solver	MSS OF											
MTH215	Hex-2 Nodal Depletion W/BC	01-06-08	30-8ep-09	253.00	MTH205	MTH255, MTH220, MTH276	264.00	┍╼┖		Hex 2 Noda	- bepietic	M WBC												
MTH220	Hex-Z Nodal Depl w/BC & SSM	01-Oct-09	11-Oct-10	260.0d	MTH215, MTH200	MTH260, MTH276	264.0d		՝ եսզ		ies-Z No	dal Depl w	BC & 33	294										
MTH225	Hex-Z Stand alone Kinetics	01-Oct-08	25-Sep-09	250.0d	MTH205	MTH265, MTH230,	80.0d	╘╍		Hex-Z Stan	d alone K	inetics												
			-			MTH276												_						
MTH230	Hex-Z Kinetics w/TH Feedback	28-Sep-09	06-Aug-10	217.0d	MTH225	MTH270, MTH235, MTH276	80.0d		6		x-Z Kinel	ics w/TH P	Feedback											
MTH235	Hex-Z Kinetics w/TH Feedback & SSM	09-Aug-10	05-Jul-11	230.0d	MTH200, MTH230	MTH275, MTH276	80.0d	1		╎╘╍═╈	н	ex-Z Kinet	ics w/TH i	Feedbac	k & SSM									
MTH240	V&V Adv. Cross Section SSM	27-Jun-08	30-Sep-09	320.0d	MTH200	MTH276	524.0d			/&V Adv. C	ross Sec	ion SSM												
MTH245	V&V Standalone Hex-Z Solver Code	01-Oct-07	09-Jan-09		MTH205	MTH276	711.0d			tandalone H									1 1					
MTH250	V&V Coupled Hex-Z Solver & SSM	29-Jun-09	30-Sep-10		MTH210	MTH276	271.0d				all Cours	lad Have?	Solver &	23M					1 1	1				
MTH255	V&V Hex-Z Nodal Depletion w/BC	27-Jun-08	30-Sep-09		MTH215	MTH276	524.0d			/&V Hex Z	Nedal De	nietion wil	BC.							+				
MTH260	V&V Hex-Z Nodal Depl w/BC & SSM	09-Jul-09	11-Oct-10		MTH220	MTH276	264.0d	I –				Z Nodal D		1					1 1					
MTH265	Vav Hex-Z Notal Depi Web a solit VaV Hex-Z Standalone Kinetics	24-Jun-08	25-Sep-09		MTH225	MTH276	527.0d	I _		N&V Hex Z				a con					1 1					
MTH205					MTH225 MTH230	MTH276	310.0d												1 1					
	V&V Hex-Z Kinetics w/TH Feedback	05-May-09	06-Aug-10									Kinetics w							1 1					
MTH275 MTH276	V&V Hex-Z Kinetics w/TH & SSM Hex-Z Methods Validation Complete	02-Apr-10	05-Jul-11 05-Jul-11		MTH235 MTH205, MTH210,	MTH276 PM270	80.0d 80.0d					V Hex-Z I x-Z Metho						_						
					MTH215, MTH220, MTH225, MTH230, MTH235, MTH240, MTH245, MTH250, MTH255, MTH250, MTH265, MTH250, MTH265, MTH270, MTH275																			
C.Q.10.50.30	.01 CTF Integral Scaled Test	01-Oct-08	29-Oct-15	1831.0d			2469.0d							 		-		50.30.01	CTE	integral 3	caled Te			
MTH280	Integral Thermal Fluids Scaled		30-Sep-10	506.0d		MTH290	2715.0d	i à			ntegral Tr	nermal Flu	ids Scale	d Test a	caling/Fac		- 1							
	Test-Scaling/Facility Sizing & Design														-	-		-						
MTH290	Integral Thermal Fluids Scaled Test-Fabrication	01-Oct-10	02-Jan-13	567.0d	MTH280	MTH295	2715.0d			·#-[Integr	al Ther	nal Fluids	Scaled (Test-Fa	sprication	n					
MTH295	Integral Scaled Thermal Fluids Test Experiments	24-Jan-14	29-Oct-15	450.0d	MTH290, CTF920		2447.0d									lr.	ntegral :	Bcaled T	Therma	il Fluids 1	fest Expe	riments		
Q.10.50.40 FI	irst Core	01-Oct-09	27-Aug-19	2584.0d			1470.0d	[7									-			-	C.Q.10.5	1.40 FI	st
FC100	Design/Build 1st Core Production Facility	01-Oct-09*	06-Apr-12	657.0d		FC110, FC140	517.0d	1				Des	ign/Build	1st Core	Productio	n Facili	ty							
FC110	1st Core Equipment Install & Checkout	09-Apr-12	17-Mar-14	506.0d	FC100	FC120	2234.0d		Г			F			ist Core E	quipmer	nt instal	I & Chec	ctout					
FC120	1st Core Fabrication Proof Test Fuel	18-Mar-14	12-Mar-15	258.0d	FC110	FC130	2234.0d	1								1st Core	e Fabric	ation Pr	roof Te	st Fuel				
FC130	1st Core Proof Test Irradiation	01-Sep-16	13-Mar-18		FC120, FL80715		1850.0d	1							1.		⁻└⊷				re Proof 1	fest imad	ation	
FC140	Fab Production Fuel in Pliot Facility	01-Oct-09	19-Dec-13	1101.0d	FC100	FC150	517.0d		L					Fai	Producti	n Fuel	in Pilot	Facility		+				
FC150	Fabricate NGNP First Core	20-Dec-13	14-Jun-16	648.0d		FC160	517.0d	1	-					¢.						First Co	re			
FC160	1st Core Proof Safety Test & PIE	22-Sep-16	11-Sep-18	514.0d		FC:165	517.0d											-			st Core P	roof Sate	ty Test	a :
FC165	Load Fuel in Graphite	12-Sep-18	27-Aug-19		FC160, MAT1490	FC170	517.0d													- F		Load Fue		
FC170	Deliver 1st Core		27-Aug-19		FC165	PM810	517.0d															Deliver 1:		1
10.60 Const		22-Mar-17	10-Dec-20	972.0d	-0.05	F16610	1133.0d															Jeiver 1	ABB PROPERTY OF	2.1
				180.0d				1										-						
-4.10.60.16 C	onstruction and Fab Support Building	22-Mar-17	28-Nov-17	180.08			12.0d					L =-1			10. min.					2.02.10.6	0.16 Con	souceen	and Path	-8
aining Level o	of Effort Actual Work	Critical Re	emaining Wo	rk		F	Page 45 of	55					ASK filter	r: Ali Ac	uvittes									

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	Activity Name	Start	Finish	Planned	Predecessors	Successors	Total Float	2008	:	2009 2	010	2011	2012	2013	2014	2015	2016	2017	201	8 2019	9 2	020	2021
				Duration																			
PM700	Welding Facility Construction	22-Mar-17	28-Nov-17	180.0d	PE250, PM500	HT3815, HT3818, HT3820, HT3830, PC8535, PC8540, PC8575	2.0d											-	Weldi	ng Facility	Construe	ction	
PM710	Fabrication Facility Construction	22-Mar-17	28-Nov-17	180.0d	PE250, PM500	HT8815, HT8820, HT8830, PC8535, PC8540, PC8575	2.0d											-	Fabric	ation Facil	ity Cons	áruction	
PM715	NGNP Site Prep & Underground Utilities	22-Mar-17	28-Nov-17	180.0d	PM500	NH0840, NH0845, NH0850, NH0855, NH0855, NH0870, NH0875, NH0880, NH0885, NH0890, NH0905, NH0915, NH0920, NH0930	12.0d												NGNF	9 Site Prep	& Under	rground	utilite
C.Q.10.60.20 Nu	olear Heat Supply System Construction	29-Nov-17	10-Dec-20	792.0d			0.0d								-+								C/2.10
NH3810	NH88 Component Testing	18-Oct-19	02-Apr-20	120.00	NH3836, NH3856, NH3851, NH3871, NH3891, NH3921, NH3931, NH3936, NH3941, NH3946	NH8815	0.0d													ĺ	7	NH33 (20 mpa
NH8815	NHSS Integrated Testing	03-Apr-20	10-Dec-20	180.0d	NHS810	PM520	0.0d														و وا		NH 88
C.Q.10.60.20.0	01 Reactor Unit System Construction	04-May-18	17-Oct-19	380.0d			0.0d												- -		🖛 c.q	.10.60.2	0.01 F
NH3820	Reactor Pressure Vessel Construction	04-May-18	17-Oct-19	380.0d	PM500, LR341	NH8836	0.0d												-		Rea	ctor Pres	ssure "
NH3825	Core Internal Structure Construction	04-May-18	17-Oct-19	380.0d	PM500, LR341	NH3835	0.0d													je na se se se se se se se se se se se se se	Core	e interna	i Etruc
NH8830	Reactivity Control System Construction	04-May-18			PM500, LR341	NHS836	0.0d												-	÷		ettv ty Ci	
NH8835	Neutron Source System Construction	04-May-18			PM500, LR341	NH8835	0.0d												-	_		itrar Sou	
NH8836	Reactor Unit System Construction Complete		17-Oct-19		NH8820, NH8825, NH8830, NH8835	NHS810	0.0d													1	-	ctor Unit	
	02 Core Conditioning System Construction		01-Oct-19	480.0d			12.0d															10.60.20 Blower	
NH3840 NH3845	CCS Blower Construction CCS Heat Exchanger Construction		01-Oct-19 01-Oct-19		PM500, PM715 PM500, PM715	NH3856 NH3856	12.0d													đ		: Bidwer : Heat Ex	
NH3850	CC8 Valves Construction	29-Nov-17			PM500, PM715	NHS855	12.00													H		Valves	
NH3855	CC8 Ploing Construction	29-Nov-17	01-Oct-19		PM500, PM715	NH8855	12.00													- it		Piping 0	
NH3856	Core Conditioning System Construction Complete		01-Oct-19		NH3840, NH3845, NH3850, NH3855	NHS810	12.0d													- F		Conditio	
C O 10 60 20 0	3 Reactor Cavity Cooling System Construction	04-May-18	17-Oct-19	380.0d	14110000, 14110000		0.0d															10.60.2	0 13 7
NH3850	Reactor Cavity Cooling System Construct	04-May-18			PM500, LR341	NHS861	0.00												_			ctor Cav	
NH3861	Reactor Cavity Cooling System Construction Complete	et may re	17-Oct-19		NHSSED	NHS810	0.00												1	F		ctor Cav	
C.Q.10.60.20.0	04 Fuel Handling and Storage System Construc	29-Nov-17	01-Oct-19	480.0d			12.0d														T C.Q.	10.60.20	2.04 F
NH3865	Fuel Loading subsystem Construction		01-Oct-19	480.0d	PM500, PM715	NH3871	12.0d								11							Loading	
NH3870	High-Level Waste Handling subsystem Construction	29-Nov-17	01-Oct-19	480.0d	PM500, PM715	NH8871	12.0d												-		High	HLevel W	/este F
NH3871	Fuel handling & Storage System Construction Complete		01-Oct-19	0.0d	NH3855, NH3870	NH3810	12.0d													L L	👆 Fuel	handling) & Sto
C.Q.10.60.20.0	5 Hellum Service System Construction	29-Nov-17	01-Oct-19	480.0d			12.0d												-		🛡 C.Q.:	10.60.20	цар н
NH3875	PHTS Inventory Control System Construc	29-Nov-17	01-Oct-19		PM500, PM715	NH3891	12.0d														_	S Irvent	
NH3880	SHTS Inventory Control System Construc		01-Oct-19		PM500, PM715	NH3891	12.0d											_	-			8 Invent	
NH3885	PHTS Hellum Purification System Construction		01-Oct-19		PM500, PM715	NH8891	12.0d													Ī	PHT	S Hellun	
NH8890	SHTS Hellum Purification System Construction	29-Nov-17			PM500, PM715	NH8891	12.0d													t	-	8 Hellun	
NH3891	Hellum Service system Construction Complete		01-Oct-19		NH3875, NH3880, NH3885, NH3890	NH3810	12.0d													ĥ		ım Servi	
	05 I&C System Construction		17-Oct-19	492.0d			0.0d												-			10,60.2	
NH3895	Operational Control System Construction	04-May-18	17-Oct-19	380.0d	PM500, LR341	NH8921	0.0d												-		Ope	rational	Contro

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	Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	203
NH8901	Reactor Protection System Construction	04-May-18	17-Oct-19	380.0d	PM500, LR341	NH8921	0.04							1 1						Reactor	Protect
NH8905	Equipment Protection System Construction	29-Nov-17	14-May-19	380.0d	PM500, PM715	NH8921	112.0d											-	Eq.	ulpment F	rotector
NH8910	Post-event Monitoring and Recovery System Construction	04-May-18	17-Oct-19	380.0d	PM500, LR341	NH8921	0.04											-			ent Movil
NH8915	Uninterruptible Power System Construction	29-Nov-17	01-Oct-19	480.0d	PM500, PM715	NH8921	12.0d													Uninterr	uptible Po
NH8920	1E Batteries Construction	29-Nov-17	01-Oct-19	480.0d	PM500, PM715	NH8921	12.0d													1E Batte	ries Con
NH8921	I&C system Construction Complete		17-Oct-19	0.06	NH3895, NH3901, NH3905, NH3910, NH3915, NH3920	NHS810	0.0d													I&C sys	em Cons
C.Q.10.60.20.0	7 Cooling Water System Construction	29-Nov-17	17-Oct-19	492.0d			0.0d												_ _	C.Q.10	60.20.C7
NH8925	Auxiliary Component Cooling Water System Const	04-May-18	17-Oct-19	380.0d	PM500, LR341	NH8931	0.0d												_	Auxiliar	/ Comco
NH8930	Equipment Protection Cooling Circuit Construction	29-Nov-17	01-Oct-19	480.0d	PM500, PM715	NH8931	12.0d											-		Equipme	nt Proter
NH8931	Cooling Water System Construction Com		17-Oct-19	0.0d	NH8925, NH8930	NH3810	0.0d													Cooling	Water B
	8 Electrical Distribution System Construction	04-May-18	17-Oct-19	380.0d			0.0d						·	tt						C.Q.10	60.20.08
NH8935	Electrical Distribution System Construction	04-May-18	17-Oct-19	380.0d	PM500, LR341	NH3936	0.0d											-		Electric	
NH8936	Electrical Distribution System Construction Complete		17-Oct-19	0.0d	NH8935	NHS810	0.04												=	Electric	
C.Q.10.60.20.0	9 Reactor Building HVAC System Construction	04-May-18	17-Oct-19	380.0d			0.0d											-	_ _	C.Q.10	60.20.09
NH8940	Reactor Building HVAC System Construc	04-May-18		380.0d	PM500, LR341	NH3941	0.0d						1					-			Building
NH8941	Reactor Building HVAC System Construction Complete		17-Oct-19	0.0d	NH8940	NH3810	0.0d													Reactor	
C.Q.10.60.20.1	0 Primary Loop Initial Clean-up System Constr	04-May-18	17-Oct-19	380.0d			0.0d													C.Q.10	60.20 <mark>.1</mark> 0
NH8945	Primary Loop Initial Clean-up System Construction	04-May-18	17-Oct-19	380.0d	PM500, LR341	NH8946	0.04													Primary	Loop III
NH8946	Primary Loop Initial Clean-up System Const Complete		17-Oct-19	0.08	NH8945	NHSS10	0.0d													Primary	Loop
Q.10.60.30 He	at Transport System Construction	22-Mar-17	24-Nov-20	960.0d			12.0d										-				🕶 C.C.:
HT8805	HTS Component Testing	02-Oct-19	17-Mar-20	120.0d	HT3825, HT3846, HT3812	HTS810	12.0d														3 Compo
HT3810	HTS Integrated Testing	18-Mar-20	24-Nov-20	180.0d	HT8805	PM520	12.0d														нъ
HT3812	HTS Procurement	22-Mar-17	24-Dec-19	720.0d	PM500	HT3805	72.0d													НТЗ Г	rocurem
C.Q.10.60.30.0	1 HTS Primary Heat Transport System Constr	22-Mar-17	01-Oct-19	660.0d			12.0d										-			C.Q.10.	0.30.0
HT8815	PHTS Circulator Construction	29-Nov-17	01-Oct-19	480.0d	PM700, PM710	HT3826	12.0d											-		PHTS C	(culator)
HTSS18	PHTS Valve Construction	29-Nov-17	01-Oct-19	480.0d	PM700	HT3825	12.0d							f				-		PHTS V	alve Cen
HT3820	Intermediate Heat Exchanger Construction	29-Nov-17	01-Oct-19	480.0d	PM700, PM710	HT3825	12.00											-		Intermed	late Hea
HT8822	Piping Construction	22-Mar-17	03-Sep-19	640.0d	PM500	HT3826	32.0d													Piping Co	nstructic
HT8825	Pressure Relief System Construction	22-Mar-17	03-Sep-19	640.0d	PM500	HT3826	32.0d										-			Pressure	Relief
HT 3825	Frimary HTS System Construction Complete		01-Oct-19	0.0d	HT3815, HT3818, HT3820, HT3822, HT3825	HT3805	12.0d													Primary	
C.Q.10.60.30.0	2 HTS Secondary Heat Transport System Con	22-Mar-17	01-Oct-19	660.0d			12.0d							1-1			-			C.Q.10.	0.30.0
HT8830	SHTS Circulator Construction	29-Nov-17	01-Oct-19	480.0d	PM700, PM710	HT3845	12.0d							11				-		знтз с	(culator)
HT8835	Hellum Isolation Valves Construction	22-Mar-17	03-8ep-19	640.0d	PM500	HT3845	32.0d													Helium is	olation V
HT3840	Piping Construction	22-Mar-17	03-Sep-19	640.0d	PM500	HT3845	32.0d						1						i ·	Piping Co	nstructic
HT8845	SHTS Flow Coupling and Mixer Construct	22-Mar-17	03-Sep-19	640.0d	PM500	HT3845	32.0d										-			SHTS FI	w Could
HT3846	Secondary HTS Construction Complete		01-Oct-19	0.0d	HT8830, HT8835, HT8840, HT8845	HT3805	12.0d												÷	Seconda	ry HTE C
Q.10.60.40 Hy	drogen Production System Construction	22-Mar-17	04-Sep-18	380.0d			1725.0d												C.Q.10.60.	,40 Hydri	gen Pip
HP3790	Fabricate Hydrogen Production Process	22-Mar-17	20-Mar-18	260.0d	HP3560, PM500	HP3795, HP3800	592.0d										-	Fabri	icate Hydro	igen Proc	uction P
HP8795	Complete H2 Process Construction		20-Mar-18	0.0d	HP3790		1845.0d											- Com	plete H2 Pr	rocess Cr	nstruck
HPS800	Couple Process to VHTR	21-Mar-18	04-Sep-18	120.0d	HP3790	PM520	592.0d											╘╼══┛╴	Couple Pro	cess to)	HTR
Q.10.60.50 Po	wer Conversion System Construction	22-Mar-17	08-Dec-20	970.0d			2.0d							11							C C C
aining Level of	Effort Actual Work		emaining Wo	-			Page 47 of 5	5				TA	K filter: A	II Activit	tioc						

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	Activity Name	Start	Finish	Planned Predecessors Duration	Successors	Total Float	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	20
PC8520	PCS Component Testing	27-Nov-19	14-Apr-20	100.0d PC8645, PC8530, PC8571, PC8511, PC8631, PC8536, PC8641, PC8646	PC8525	2.0d				•									-PCS	Corro
PC8525	PCS Integrated Testing	15-Apr-20	08-Dec-20	170.0d PC8520	PM520	2.0d													╘╼╼╈╈	PC
PC8530	PCS Procurement	22-Mar-17	29-Oct-19	680.0d PM500	PC8520	122.0d										┝╾══╪			PCS Proc	urer
C.Q.10.60.50.01	Turbine Generator System Construction	22-Mar-17	26-Nov-19	700.0d		2.0d													C.Q.10.6	0.50.
PC8535	High-Pressure Turbine Construction	29-Nov-17	26-Nov-19	520.0d PM700, PM710	PC8571	2.0d							TT			- P	-		High-Fre	ssu
PC8540	Intermediate-Pressure Turbine Construction	29-Nov-17	26-Nov-19	520.0d PM700, PM710	PC8571	2.0d													Intermed	ate i
PC8545	Low-Pressure Turbines Construction	22-Mar-17	29-Oct-19	680.0d PM500	PC8571	22.0d										-			Low-Pres	sure
PC8550	Turbine Control Valve System Construction	22-Mar-17	29-Oct-19	680.0d PM500	PC8571	22.0d										┝╾╍╍┿			Turbine C	ontro
PC8555	Generator and Auxiliaries Construction	22-Mar-17	29-Oct-19	680.0d PM500	PC8571	22.0d										-			Generato	r and
PC8560	Lube OII System Construction	22-Mar-17	29-Oct-19	680.0d PM500	PC8571	22.0d							TT			-			Lube OI :	lyst
PC8565	Vacuum System Construction	22-Mar-17	29-Oct-19	680.0d PM500	PC8571	22.0d										┝╾╍╍┿			Vacuum :	yste
PC8570	Air-Cooled Condenser Construction	22-Mar-17	29-Oct-19	680.0d PM500	PC8571	22.0d										┝╾╍╍┿			Alr-Coole	
PC8571	Turbine Generator System Construction Complete		26-Nov-19	0.0d PC8535, PC8540, PC8545, PC8550, PC8565, PC8560, PC8565, PC8570	PC8520	2.0d												-	Turbine	iene
C.Q.10.60.50.02	Main Stream System Construction	22-Mar-17	26-Nov-19	700.0d		2.0d													C.Q.10.6	0.50
PC8575	Steam Generator Construction	29-Nov-17	26-Nov-19	520.0d PM700, PM710	PC3611	2.0d						1	TT			4	-		Steam G	ener
PC8580	Startup/Shutdown Steam System	22-Mar-17	29-Oct-19	680.0d PM500	PC8611	22.0d													Startup S	iutde
PC8585	Extraction and Auxiliary Steam System	22-Mar-17	29-Oct-19	680.0d PM500	PC8611	22.0d										-			Extractor	and
PC8590	Steam Bypass/Dump System Construction	22-Mar-17	29-Oct-19	680.0d PM500	PC3611	22.0d										-			Steam By	pass
PC8595	Seal Water System Construction	22-Mar-17	29-Oct-19	680.0d PM500	PC8611	22.0d										-			Seal Wat	ar S <mark>a</mark>
PC3600	Glad Steam System Construction	22-Mar-17	29-Oct-19	680.0d PM500	PC3611	22.0d						1	11			-			Glad Stea	m S
PC8605	Steam Vents and Drains Construction	22-Mar-17	29-Oct-19	680.0d PM500	PC3611	22.0d										-			Steam Ve	nts a
PC8610	Steam Pressure Relief System Construction	22-Mar-17	29-Oct-19	680.0d PM500	PC3611	22.0d										-		<u> </u>	Steam Pr	ssu
PC3611	Main Stream System Construction Complete		26-Nov-19	0.0d PC8575, PC8580, PC8585, PC8590, PC8595, PC8500, PC8605, PC8610	PC8520	2.0d													Main Str	am
C.Q.10.60.50.03	Feed water and Condensate System Constr	22-Mar-17	29-Oct-19	680.0d		22.0d													C.Q.10 6	.50
PC8615	Heater Drains system Construction	22-Mar-17	29-Oct-19	680.0d PM500	PC8631	22.0d							1-1			-			Heater D	ains
PC8620	Feed water Heater System Construction	22-Mar-17	29-Oct-19	680.0d PM500	PC8631	22.0d										-			Feed wat	ar He
PC8625	High-Pressure Feed water Pump Construction	22-Mar-17	29-Oct-19	680.0d PM500	PC8631	22.0d										-		F	High-Pres	sure
PC8630	Condensate Pumps Construction	22-Mar-17	29-Oct-19	680.0d PM500	PC8631	22.0d										-			Conders	/te F
PC8631	Feed water & Condensate System Construction		29-Oct-19	0.0d PC8615, PC8620, PC8625, PC8630	PC8520	22.0d													Feed wat	
	PCS Control and Instrumentation System Co	22-Mar-17	29-Oct-19	68D.Dd		22.0d						1				-			C.Q.10 6	
PC8635	PCS Control and Instrumentation System Construction	22-Mar-17	29-Oct-19	680.0d PM500	PC8636	22.0d										-		Ľ	PCS Con	
PC8636	PCS I&C System Construction Complete		29-Oct-19	0.0d PC8635	PC8520	22.0d												- +	PCS I&C	
	PC8 Electrical Distribution System Construct		29-Oct-19	680.0d		22.0d										-		-	C.Q.106	
PC8640	PCS Electrical Distribution System Construction	22-Mar-17	29-Oct-19	680.0d PM500	PC3641	22.0d										-			PCS Elec	trical
PC8641	PCS Electrical Distribution System Const Complete		29-Oct-19	0.0d PC3640	PC8520	22.0d												۴	PCS Elec	
	Turbine Building HVAC Construction	22-Mar-17	29-Oct-19	68D.Dd		22.0d										-			C.Q.106	
PC8645	Turbine Building HVAC Construction	22-Mar-17	29-Oct-19	680.0d PM500	PC8520, PC8646	22.0d										-		<u> </u>	Turbine B	
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BOD SOP - Market Sectorship V-Vac 1 Sole - Vac 1 <td>BOP200</td> <td>BOP Site Preparation</td> <td>22-Mar-17</td> <td>08-Aug-17</td> <td>100.0d</td> <td>PM500</td> <td>BOP205, BOP225</td> <td>2.0d</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1::</td> <td></td> <td></td> <td></td> <td>BOP SI</td> <td>e Prepara</td> <td>ation</td> <td></td> <td></td> <td></td>	BOP200	BOP Site Preparation	22-Mar-17	08-Aug-17	100.0d	PM500	BOP205, BOP225	2.0d							1::				BOP SI	e Prepara	ation			
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B 07:14 B07:15 B07:12 B07:15	BOP210	BOP Foundations Construction	27-Dec-17	15-May-18	100.0d	BOP205	BOP215	2.0d	1										_					
BOF200 BOF Bit/DS BOF200 BOF200 <td>BOP215</td> <td>BOP Buildings Construction</td> <td>16-May-18</td> <td>08-Jan-19</td> <td>170.0d</td> <td>BOP210</td> <td>BOP220, BOP230</td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>_ C</td> <td>В</td> <td>OP Bul</td> <td>tines Con</td> <td>struction</td> <td>a</td>	BOP215	BOP Buildings Construction	16-May-18	08-Jan-19	170.0d	BOP210	BOP220, BOP230		1										_ C	В	OP Bul	tines Con	struction	a
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C.Q.20.10 CTF Owners Englineer 01-Oct-07 01-O	PM1000	Program Management Support Dⅅ		15-Apr-25	0.0d	PM640		0.0d	1						111									
C.Q.20.10 CTF Owners Engineer 01-Oct-07 01-Oct-07 758.0d 3792.0d C.Q.20.10 CTF Owners Engineer C.G.20.10.10 CTF Project Management Support 01-Oct-07 01-Oct-07 758.0d 3792.0d C.Q.20.10 CTF Owners Engineer C.TF100 Final PED & PDS Request 04-Apr-08 0.0d CTF105 PED Funding Authorizations for FY-10 07-Apr-08 392.0d CTF105 PED Funding Authorizations for FY-10 CTF110 Prepare FY08 CTF Detailed Work Flam 01-Oct-07 0.0d CTF115 85.0d Prepare FY08 CTF Detailed Work Flam 01-Oct-07 0.0d CTF115 85.0d Prepare FY08 CTF Detailed Work Flam 01-Oct-07 0.0d CTF115 85.0d Prepare FY08 CTF Detailed Work Flam 01-Oct-07 0.0d CTF115 85.0d Prepare FY08 CTF Detailed Work Flam 01-Oct-07 0.0d CTF115 85.0d Prepare FY08 CTF Detailed Work Flam 01-Oct-07 0.0d CTF115 85.0d Prepare FY08 CTF Detailed Work Flam 01-Oct-07 0.0d CTF115 01-Oct-07 01-Oct-07 0.0d CTF115 01-Oct-07 01-Oct-07 01-Oct-07 01-Oct-07 </td <td>Q.20 Component T</td> <td>est Facility (CTF)</td> <td>01-Oct-07</td> <td>19-Jun-15</td> <td>1987.0d</td> <td></td> <td></td> <td>2563.0d</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>(</td> <td>C.Q.20 Cor</td> <td>mponent</td> <td>Test Facil</td> <td>ty (CTF)</td> <td></td> <td></td> <td></td> <td></td>	Q.20 Component T	est Facility (CTF)	01-Oct-07	19-Jun-15	1987.0d			2563.0d								(C.Q.20 Cor	mponent	Test Facil	ty (CTF)				
C.0.20.10.10 CTF Project Management Support 01-Oct-07 01-Oct-07 758.04 3792.04 C.0.20.10.10 CTF Project Management Support CTF100 Final PED & PDS Request 04-Apr-08* 0.04 CTF105 4050.04 Final PED & PDS Request			01-Oct-07	01-Oct-10	758.0d			3792.0d				C.Q.20.10	CTF Own	ners Engli	neer									
CTF100 Final PED & PD3 Request 04-Apr-08* 0.0a CTF105 4050.0d Final PED & PD3 Request CTF105 PED Funding Authorizations for FY-10 07-Apr-08 06-Oct-09 392.0d CTF105 4050.0d PED Funding Authorizations for FY-10 CTF110 Prepare FY08 CTF Detailed Work Plan 01-Oct-07 0.0d CTF115 85.0d Prepare FY08 CTF Detailed Work Plan			01-Oct-07	01-Oct-10												ent Support								
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CTF12D Prepare Work Packages 01-Oct-07 08-Oct-07 5.00 CTF115 CTF125 85.0d Prepare Work Packages			01-Oct-07												111									
CTF125 Subcontractors Prepare Work Package 09-047/ 22-04-07 10.06 OTF120 CTF130 85.06 Subcontractors Prepare Work Package		-									-	Package												
CTF130 BEA Review, Negotiate and Notice to 22-Oct 12-Nov-07 15:00 CTF125 CTF120 BEA Bridew, Negotiate and Notice to Proceed											-		nceed											
CTP130 BEC Review, Regionale and Notice to Proceed Remaining Level of Effort Actual Work Critical Remaining Work Page 49 of 55	011120		11 00.07	12 1107-07	15.00				ſ	, reg	strant and N													

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		Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2	2008	20	909	2010	201	1	2012	201	3 20	14	2015	2016	2017	201	8	2019	202	2	2021	Ŧ
СТЯ	F135	NEPA-EIS Evaluation/Process During Conceptual	28-Apr-08	02-Oct-09	374.0d	CTF200		4053.0d	┟┍╼╢				EPA-EIS	Evalua	tion/Pr	cess D	uring C	onceptia	al l										1
СТР	F140	State of Idaho Air Permits	25-Apr-08	01-Oct-09	374.0d	CTF200		4054.0d	I ⊢-ı			8	tate of id	aho Air	Permit														
СТР	F145	Prepare CTF Project Management Docu	02-Jun-08	11-Feb-09	182.0d	CTF150		4220.0d			P P	repare	CTF Pro	ject Ma	nagem	ent Docu	iments												
СТР	F150	Issue PCN to Subcontractors & Finalize	04-Apr-08	02-Jun-08	41.0d	CTF225	CTF145, CTF235,	85.0d	┢╘	Iss	ue PC	N to St	ubcontra	ctors &	Finaliza	CTF W	Ps												
		CTF WPs					CTF270, CTF290			ſ	~																		
СТЕ	F155	PED & PDS Funding Authorization FY-11 Update	07-Apr-09*	01-Oct-10	389.0d			3792.0d			<u> </u>							zation FY											
C.Q	2.20.10.10.01	CTF Develop and Award EPC Contract(s)	16-Dec-08	11-Jan-10	272.0d			3982.0d			-	-	C.Q.20	.10.10.0	H CTF	Develo	p and /	ward EF	C Cant	act(s)									
0	CTF160	CTF EPC Scope of Work	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF165	85.0d		l r	-	CTF	EPC Sco	ope of V	iork														
0	CTF165	INL EPC SOW Review	11-Jun-09	09-Jul-09	20.0d	CTF160, CTF230	CTF170, CTF175	85.0d				INL	EPC SO	W Revie	ew.														
0	CTF170	DOE Review & Project Validation	09-Jul-09	01-Oct-09	60.0d	CTF165		4054.0d			_ •-	– D	OE Revi	ew & Pr	oject V	alidation	1												
0	CTF175	Miss. Validation/Design Baseline, IPR (Optional)	09-Jul-09	01-Oct-09	60.0d	CTF165	CTF180, CTF185	85.Dd			-	– M	liss. Valk	dation/D	esign E	aseline,	, IPR (Dotionati											
	CTF180	DOE or PPP issues EPC SOW & RFP	01-Oct-09	24-Dec-09	60.0d	CTF175		3994.0d	111	il-		-0	DOE or	PPP is:	sues EP	C SOM	A RF												-
0	CTF185	FY 10 Continuing Resolution	01-Oct-09	11-Jan-10	72.0d	CTF175	CTF445	85.0d				╘╾┏┓	FY 10 (Continui	ng Res	olution													
C.Q	2.20.10.10.02 H	NL Site Power Upgrade	24-Jun-08	02-Oct-09	311.0d			3557.0d		┆┳┿╸		- c	.0.20.10	.10.02	INL SI	e Power	Upgra	ae											
0	CTF190	Site Power Line Approval/Negotiations Idaho Power	24-Jun-08'	02-Jan-09	139.0d		CTF195	3557.0d			SI	te Powe	er Line A	pproval	Negoti	ations Id	iaho Po	men											
0	CTF195	Site Power Line-Idaho Power Design 230KV Line	05-Jan-09	02-Oct-09	195.0d	CTF190	CTF492	3557.0d		ŀ	-+	- °	ite Powe	r Line-k	iaho Po	wer De	sign 23												
C.Q.20	0.10.12 CTF P	roject Engineer Support	12-Nov-07	11-Jun-09	386.0d			4134.0d	╶╢╢			00	20.10.12	CTF P	rolect E	ngineer	Suppo	d to the											•••
	F200	Industry CTF Recommendations Bludies	12-Nov-07	08-Feb-08	64.0d	CTF130	CTF135, CTF140, CTF205, CTF210, CTF215, CTF220, CTF225	85.Dd		ndust	ry CTF	F Risco	mmenda	tions St	udies														
СТР	F205	INL CTF Site Selection Report	08-Feb-08	18-Mar-08	27.0d	CTF200		4456.0d	╎┿┫	INL C	TF SI	ite Sele	ction Re	port															
СТР	F210	INL CTF PCD F&ORs	08-Feb-08	18-Mar-08	27.0d	CTF200		4456.0d	++di	INL C	TF PC	CD 54	ORs																
СТР	F215	CTF Mission Need	08-Feb-08	18-Mar-08	27.0d	CTF200		4456.0d				n Need																	
CTR	F220	CTF Facility Configuration Study	08-Feb-08	18-Mar-08	27.0d	CTF200		4456.0d	l 🖬	ст=	Facility	y Confi	guration	Study				-1-1-1											-
CTR	F225	CTF ICOR SOW - Engineering Sections	08-Feb-08	04-Apr-08	40.0d	CTF200	CTF150	85.0d	╘╼∄	CTF	ICDR	sow	- Enginee	ering Se	ctions														
CTR	F230	CTF EPC SOW - Engineering Sections	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF165	85.0d		•		CTF	EPC SO	W - Eng	ineerin	g Sectio	ns												
C.Q.20.2	20 CTF Conc	eptual Design	02-Jun-08	01-Oct-09	323.0d			4054.0d		-		с	Q.20.20	CTF C	oncept	ual Desi	gn												
CTF23	85	CTF TFR	02-Jun-08	03-Sep-08	67.0d	CTF150	CTF300	85.0d	L L		CTF T	FR																	_
CTF24	10	Conceptual Cost Estimate	14-May-09	09-Jul-09	40.0d	CTF250	CTF260	4114.0d	l[i	i[-T-		- Don	ceptual (Cost Est	imate														
CTF24	15	INL Review	11-Jun-09	25-Jun-09	10.0d	CTF325, CTF340, CTF345, CTF340, CTF345, CTF360, CTF355, CTF360, CTF355, CTF370, CTF375, CTF380, CTF375, CTF380, CTF400, CTF405, CTF400, CTF405, CTF400, CTF405, CTF410, CTF415, CTF430, CTF435, CTF440	CTF250	4054.0d					Review																
CTF25		Conceptual Design Rvw Comment Incorporation	25-Jun-09	09-Jul-09		CTF245	CTF255, CTF240	4054.0d			Ŀ	1	ceptual 0	_				ration											
CTF25		DOE Review & Project Validation	09-Jul-09	01-Oct-09		CTF250	CTF260	4054.0d			-		OE Revi				1												
CTF26		Conceptual Design Complete		01-Oct-09		CTF255, CTF240	CTF265	4054.0d	I	ļ .			onceptus			lete													
CTF26		Critical Decision-1		01-Oct-09		CTF260		4054.0d				- 11	ritical De																
		Conceptual Studies & Alternatives Analysis		29-Oct-08	77.0d			4282.0d					01 initial					111	alysis										
СТР	F270	Study #1 TDRM and Test Plans for High Temp SSCs	30-Jun-08	01-Oct-08	67.0d	CTF150	CTF275, CTF280, CTF285	4295.0d			Study	/#1 TD	RM and	Test Pk	ans for	High Te	mp 88	°*											
СТР	F275	TDRM Working Meeting	30-Jun-08		0.04	CTF270	CTF280	4382.0d	Ľ	* 10	ови и	Norling	9 Meeting	1															_
lomainir	ng Level of Eff	fort Actual Work	Ordinal R	emaining Wo	-		F	Page 50 of 5	55							TAS	SK filte	r: All Ac	tivities										1

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		Activity Name	Start	Finish	Duration	Predecessors	Successors	Total Float	2008	2	009	2010	2011	2012	20	13 1	2014	2015	2016	2017	2018	201	19	2020	2021	+
	CTF280	25% CTF Study Reviews		01-Oct-08	0.0d	CTF270, CTF275		4315.0d	╧╝┶	2585	CTR	Study Re	views				;					_				_
	CTF285	Study #2 Integrated NGNP NT SSC Test Schedule	06-Aug-08	01-Oct-08	40.0d	CTF270	CTF290, CTF295	4295.0d	9	etud	ly #2 ir	ntegrates	I NGNP NT	88C Test	Schedu	•]									
	CTF290	Prepare ICD Other Studies	06-Aug-08	01-Oct-08	40.0d	CTF150, CTF285	CTF295	4315.0d	եր աներաներություն հարարանանան հարարանանան հարարանանան հարարանան հարարանան հարարանան հարարան հարարան հարարան հա	400	are 🖒	D Other	Studies													
	CTF295	ICD Studies Review (50% ICD Review)		29-Oct-08	0.06	CTF285, CTF290		4295.0d		nco	Studie	ies Revie	Studies w (50% ICC	(Review)												
,	C.Q.20.20.02 CTF	initial Conceptual Design Report	03-Sep-08	16-Dec-08	64.0d			78.0d	- I+	🖛 🗘	Q.202	20.02 C	TF Initial Co	nceptual De	esign R	eport										
	CTF300	CTF Test Loop Initial Conceptual Design	03-Sep-08	11-Nov-08	49.0d	CTF235	CTF310, CTF305	85.0d	<u>₽</u> ₽	ј фт	F Test	Loop In	tial Concep	tuai Design		i										
	CTF305	Prepare CTF ICDR	10-Sep-08	01-Dec-08	58.0d	CTF300	CTF310	85.0d		Fre	epane	CTF ICD	R				1									
	CTF310	ICDR 90% Review	01-Dec-08	09-Dec-08	6.0d	CTF300, CTF305	CTF315	85.0d			DR 9D	96 Revie	w													
	CTF315	Incorporate ICDR Comments	09-Dec-08	16-Dec-08	5.0d	CTF310	CTF320	85.0d	- E	E Inc	corper	ate ICDF	Comment	5												
	CTF320	Issue ICOR		16-Dec-08	0.04	CTF315	CTF160, CTF230, CTF335, CTF340, CTF335, CTF340, CTF355, CTF360, CTF365, CTF360, CTF365, CTF370, CTF360, CTF360, CTF390, CTF440, CTF415, CTF440, CTF415, CTF440, CTF435, CTF440, CTF435, CTF440, CTF435, CTF440, CTF375	95.0d		Y [55	sue ID	DR														
,	C.Q.20.20.03 CTF	Conceptual Decign Studies	16-Dec-08	12-Feb-09	35.0d			4139.0d			- II.			ptual Design		s										
-	CTF325	Study #3 Prepare Loop Efficiency Study	16-Dec-08	12-Feb-09	42.0d	CTF320	CTF245	4139.0d	•		- 11			Iclency Stu	-		1									
	CTF330	Study #4 CTF & NGNP Fab. Facility Study	16-Dec-08	12-Feb-09		CTF320	CTF245	4139.0d	- I-					b. Facility S												
	CTF335	Study #5 CFA Final Site Selection & Dev	16-Dec-08	12-Feb-09	42.0d	CTF320	CTF245	4139.0d	⊢	•••] =	Study #	#5 CFA	Final Site S	election & D	ev Stud	av 🕴										
	CTF340	Study #5 International & Other User Requirements	16-Dec-08	12-Feb-09	42.0d	CTF320	CTF245	4139.0d	•	۴	Study #	≠6 Intern	ational & O	ther User R	equiren	nents										
	CTF345	Study #7 Power Usage Study	16-Dec-08	12-Feb-09	42.0d	CTF320	CTF245	4139.0d	- F	• • [s	Study #	#7 Powe	r Usage Sti	idy												
,	C.Q.20.20.04 CTF	Conceptual Design Report	16-Dec-08	11-Jun-09	120.0d			4054.0d		-	cic	2 20 20 0	4 CTF Co	nceptual De	sign Re	port	1									
	CTF350	Administrative Facility Conceptual Design	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF245	4054.0d	-	-	l ∧ah	ministrat	ve Facility (Conceptual	Design											
	CTF355	High-Bay Facility Conceptual Design	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF245	4054.0d		-	3 տեր	h-Bay F	scility Conc	eptual Desij	an											
	CTF360	Warehouse, Chem Prep & Storage Bidg	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF245	4054.0d	- I-	-	we	rehouse	Chem Pre	p & Storage	Bidg											
	CTF365	Water Process Building	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF245	4054.0d		-=	w we		ess Building			11										
	CTF370	Hellum Supply System	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF245	4054.0d	•		1.14	llum Sup	ply System			-1-1-1	1									
	CTF375	Underground Utilities	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF245	4054.0d	∣ •		1 ստես	dergrour	d Utilities													
	CTF380	Cooling Towers	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF245	4054.0d		-=		oling Toy	vers				1									
	CTF385	Generator Building	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF245	4054.0d	-	┉╞	de	nerator B	Suilding				1									
	CTF390	Electrical & Communications Distribution	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF245	4054.0d	•	-	E			ations Distri												
	C.Q.20.20.05 CTF	Conceptual System Design Decoriptions (16-Dec-08	11-Jun-09	120.0d			4054.0d		-	d	2 20 20 0	5 CTF Co	nceptual Sy	stem D	esign De	scriptions	s (SDD/K	CD)							
	CTF400	Administrative Facility Conceptual Design	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF245	4054.0d			l Alla			Conceptual												
	CTF405	High-Bay Facility Conceptual Design	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF245	4054.0d	-	╍╧╧	выы	h-Bay F	scility Conc	eptual Desi	an											
	CTF410	Warehouse, Chem Prep & Storage Bidg	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF245	4054.0d		-	- we	rehouse	Chem Pre	p & Storage	Bidg											
	CTF415	Water Process Building	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF245	4054.0d	-	┉╞	1 w 4	ster Proc	ess Building				1									
	CTF420	Hellum Supply System	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF245	4054.0d			┉⋕	llum Sup	ply System				1									
	CTF425	Underground Utilities	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF245	4054.0d		-	U	dergrour	d Utilities													
	CTF430	Cooling Towers	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF245	4054.0d	-	┉╴╴	de	oling Tou														
	CTF435	Generator Building	16-Dec-08	11-Jun-09		CTF320	CTF245	4054.0d	-	-=	de	nerator B														
	CTF440	Electrical & Communications Distribution	16-Dec-08	11-Jun-09		CTF320	CTF245	4054.0d	۱.				-	ations Distri	bution		1									
C.0	2.20.30 CTF Prel	iminary Design	11-Jan-10	20-Jan-11	269.0d			3713.0d				-	C.Q.2	0.30 CTF	Prelimin	ary Des	; gn									
		Project Management Support	11-Jan-10	20-Jan-11	269.0d			3713.0d						0.30.10 CT		- 1 i		Support								
																-17-										-
200	maining Loud of 5	fort Actual Mark	Critical D	amaining We	ri a			Page 51 of 5	5					T/	ASK filt	er: All A	ctivities									-
ver	maining Level of E ual Level of Effort		Critical R	emaining Wo	IN IS																					

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	Activity Name	Start	Finish	Planned	Predecessors	Successors	Total Float	2008	2009	2010	2011	2012	2013	201	4 2019	2010	5 2017	2018	2019	2020	2021	1
				Duration			1012111021			2010	2011	1012					- 2011	2010	2015	2020		È
CTF445	Start EPC Contract	11-Jan-10		0.04	CTF185	CTF455, CTF510, CTF505, CTF510, CTF515, CTF520, CTF525, CTF530, CTF535, CTF540, CTF555, CTF550, CTF555, CTF550, CTF555, CTF570, CTF555, CTF570, CTF555, CTF510, CTF555, CTF510, CTF555, CTF510, CTF515, CTF510, CTF615, CTF610, CTF615, CTF610, CTF615, CTF610, CTF615, CTF610, CTF615, CTF610, CTF615, CTF610, CTF615, CTF610, CTF615, CTF610, CTF615, CTF610, CTF610, CTF615, CTF610, CTF610, CTF615, CTF610, 85.0d			Start I	EPC Contra	sct											
CTF450	PDS Const Funding Authorization Update FY 12	05-Apr-10*	21-Sep-10	122.0d		CTF640, CTF810	3530.0d			-	PDS Con:	st Funding /	Authoriza	flon: Upda	e FY 12							
CTF455	Update Program Management Documents	11-Jan-10	31-May-10	100.0d	CTF445		3882.0d			• 💶 U	pdate Progr	ram Manage	ement Do	ouments								
CTF460	CTF Prelim Design Cost Estimate	31-May-10			CTF570		3852.0d					Design Cos		1 2 2								
CTF465	NGNP Preliminary 90% Design Review	31-May-10	28-Jun-10	20.0d	CTF505, CTF510, CTF515, CTF520, CTF525, CTF530, CTF535, CTF540, CTF545, CTF550, CTF555, CTF550, CTF565, CTF570	CTF470	85.0d				IGNP Prelir	minary 90%	Design F	₹vjew								
CTF470	Incorporate Prelim Design Rev Comments	28-Jun-10	12-Jul-10	10.0d	CTF465	CTF475	85.0d			║║╘┓╻	ncorporate	Prelim Desi	ign Rev (omments								
CTF475	Issue Preliminary Design		12-Jul-10	0.0d	CTF470	CTF480	85.Dd			5	ssue Prelim	ninary Desig	an									
CTF480	Miss Validation/Baseline Const., IPR (optional)	12-Jul-10	17-Sep-10	49.0d	CTF475	CTF485, CTF490	85.0d					dation/Basel		t, IPR (o)	(ional)							
CTF485	OECM/EIR Review	12-Jul-10	20-Sep-10	50.0d	CTF480	CTF490	85.0d				OECM/EI			1777								-
CTF490	Critical Decision-2 & 3a		20-8ep-10	0.04	CTF485, CTF480	CTF655, CTF670, CTF675, CTF680, CTF730, CTF735, CTF750, CTF765, CTF775, CTF765, CTF775, CTF785, CTF800	85.0d			╞┊	Critical De	ecision-2 & :	3a									
C.Q.20.30.10.01	INL Site Power Upgrade	02-Feb-10	20-Jan-11	253.0d			3713.0d			╽╅┽╾	- C.Q.2	0.30.10.01	INL Site	Fower Up	grade							
CTF492	Site Power Line - Idaho Power Design		03-May-10		CTF195	CTF494, CTF496	3557.0d			Leila I St		ne - Idaho P		1 1 1	-							
	230kV Line					-				∣₽∣												
CTF494	Site Power Line - Idaho Power Const. Power Line	04-May-10	22-Sep-10	102.0d	CTF492		3799.0d				Site Powe	er Line - Idal	ho Power	r Canst. P	ower Line							
CTF496	Site Power Line - BEA 230kV Line/Substation Const	04-May-10	20-Jan-11	188.0d	CTF492	CTF660	3557.0d			┡╋	Site P	ower Line -	BEA 230	%V Line/S	ubstation C							
	Project Engineer Support	11-Jan-10	31-May-10	100.0d			3882.0d					2 CTF Proje	-	1 1 7	rt							
CTFS00	Update CTF Project Engineering Docume		31-May-10		CTF445		3882.0d					Project Eng			5							
	Preliminary Design Dwgs & Const Spece	11-Jan-10	31-May-10	100.0d			85.Dd			C C		CTF Prell		esign Dwg	is & Const	Bpecs -						
CTFS05	Preliminary CTF TFR Updates	11-Jan-10	22-Feb-10		CTF445	CTF465	155.0d					TFR Upda										
CTF510	CTF Loop & Test Equipment Design PD	11-Jan-10	31-May-10		CTF445	CTF465	85.0d					Test Equipr	ment Des	ian PD								
CTF515	High-Bay Facility	11-Jan-10	31-May-10		CTF445	CTF465	85.0d				gh-Bay Fac											
CTF520	Administrative Support Facility	11-Jan-10	31-May-10		CTF445	CTF465	85.0d				1	e Support F										
CTF525	Warehouse, Chem Prep & Storage Bidg	11-Jan-10	31-May-10		CTF445	CTF465	85.0d					Chem Prep	a storag	IN LOOD								
CTF530	Water Process Building	11-Jan-10	31-May-10		CTF445	CTF465	85.0d				ater Proces											
CTF535 CTF540	Sewer System	11-Jan-10	31-May-10		CTF445	CTF465	85.0d				wer Syster											
	Potable Water System	11-Jan-10	31-May-10		CTF445	CTF465 CTF465	85.0d				table Wate											
CTF545 CTF550	Generator Building Fire Water System	11-Jan-10 11-Jan-10	31-May-10 31-May-10		CTF445 CTF445	CTF465	85.0d				enerator Bu re Water Sy											
CTF555	Water Process Building		31-May-10 31-May-10		CTF445	CTF465	85.00				ater Proces	-										
- 17 300	water inforces building	1 Page 10	3 reway-10	100.00	011440	V17403	65.00				and Figures	as benenig		111								-
	Effort Actual Work		emaining Wo	-			Page 52 of 8	55				ΠA	ASK filter	r: All Acth	/ttles							-

NGNP INTEGRATED SCHEDULE DEVELOPMENT PLAN

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NGNP INTEGRATED PLANNING SCHEDULE 9-29-2008 Activity ID Activity Name Planned Predecessors Successors intal Eloaf 2008 2009 2010 2011 2012 2013 2014 2015 2016 2018 2019 2020 2021 2022 202 Start Finish 2017 Duration Cooling Towers CTF560 Cooling Towers 11-Jan-10 31-May-10 100.0d CTF445 CTF465 85.00 CTF565 11-Jan-10 31-May-10 100.0d CTF445 CTF465 85.0d Raw Water system CTE570 Electrical and Communication Distribution 11-Jan-10 31-May-10 100.0d CTF445 CTF465, CTF460 85.0d Electrical and Communication Distributio C.Q.20.30.02 CTF Prelim Design System Design Descriptions 11-Jan-10 31-May-10 100.0d 3882.0d C.Q.20.30.02 CTF Prelim Design stein Design Descriptions 100 Administrative Facility Conceptual Design 11-Jan-10 31-May-10 3882.00 Administrative Facility Conceptual Design CTF575 100.0d CTF445 --CTF580 High-Bay Facility Conceptual Design 100.0d CTF445 3882.00 High-Bay Facility Conceptual Desig 11-Jan-10 31-May-10 CTF585 Warehouse, chem Prep & Storage Bidg 11-Jan-10 31-May-10 100.0d CTF445 3882.0d Warehouse, chem Prep & Storage Bildg CTF590 11-Jan-10 31-May-10 100.0d CTF445 3882.0d - Water Process Bidg Water Process Bidg CTF595 100.0d CTF445 3882.00 Helium Supply System Hellum Supply System 11-Jan-10 31-May-10 CTF600 100.0d CTF445 3882.00 iderground Utilities Underground Utilities 11-Jan-10 31-May-10 11-Jan-10 31-May-10 3882.0 Cooling Towers CTF605 Cooling Towers 100.0d CTF445 CTF610 3882.0d Generator Building Generator Building 11-Jan-10 31-May-10 100.0d CTF445 Electrical & Communications Distribution 3882.0d Electrical & Communications Distribution CTF615 11-Jan-10 31-May-10 100.0d CTF445 3882.00 -C Q.20.30.03 CTF Performance/Procurement Specifications C.Q.20.30.03 CTF Performance/Procurement Specifications 11-Jan-10 31-May-10 100.0d CTF620 CTF635 3463.00 11-Jan-10 31-May-10 100.0d CTF445 IHX CTF625 100.0d CTF445 3882.00 Ducting Ducting 11-Jan-10 31-May-10 3882.0 Electrical Distribution Equipment CTF630 Electrical Distribution Equipment 11-Jan-10 31-May-10 100.0d CTF445 C.Q.20.30.04 CTF Procurement C.Q.20.30.04 CTF Procurement 31-May-10 27-Sep-10 85.0d 3463.0d CTF635 Long-Lead Procurements 31-May-10 27-Sep-10 85.0d CTF620 CTF805 3463.0d -Long-Lead Procurements 3454.00 C.Q.20.40 CTF Final Design C.Q.20.40 CTF Final Design 20-Sep-10 18-Jan-12 348.0d C.Q.20.40.10 CTF Project Management Support - Final Design 20-Sep-10 18-Jan-12 348.0d 3454.00 C.Q.20.40.10 C F Project Management Support - Final Design PDS Constitunding Authorization Update FY 12 CTF640 PDS Const funding Authorization Update 22-Sep-10 04-Oct-11 270.0d CTF450 CTF645 3530.0d FY 12 CTF PDS Funding Request Submit CTE645 CTF PDS Funding Request Submittal 22-Sep-10 0.0d CTE540 3800.04 CTF PDS Funding Authorization FY 13 Update CTF650 CTF PDS Funding Authorization FY 13 11-Apr-11" 18-Jan-12 203.0d CTF840 201.0d Update Update CTF Project Management Documents C.Q.20.40.10.01 INL Site Power Upgrade CTF655 Update CTF Project Management Docum... 20-Sep-10 03-Oct-11 270.0d CTF490 CTF715 86.0 156.0d 3557.00 C.Q.20.40.10.01 INL Site Power Upgrade 21-Jan-11 26-Aug-11 Site Power Line - BEA Const. 230kV Line Const. CTF660 Site Power Line - BEA Const. 230kV Line 21-Jan-11 26-Aug-11 156.0d CTF496 3557.00 Const CQ.20.40.12 CTF Project Engineering Support - Final Design C.Q.20.40.12 CTF Project Engineering Support - Final Design 20-Sep-10 07-Feb-11 100.0d 3702.00 CTF67D Update CTF Project Engineering Docume... 20-Sep-10 07-Feb-11 100.0d CTF490 3702.00 C.Q.20.40.01 CTF Final Design C.Q.20.40.01 CTF Final Design 20-Sep-10 10-Jan-12 341.0d 3461.0 CTF675 Final CTF TFR Updates 20-Sep-10 01-Nov-10 30.0d CTF490 CTF740 3652.0 - CTF Procurement Specific CTF680 CTF Procurement Specifications 20-Sep-10 07-Feb-11 100.0d CTF490 3702.0 TF System Design Descriptions CTF685 CTF System Design Descriptions 20-Sep-10 27-Jun-11 200.0d CTF730 3602.0 CTF 90% Review CTF690 CTF 90% Review 27-Jun-11 26-Jul-11 21.0d CTF790 CTF700 85.0d CTF695 CTF Final Construction Cost Estimate 17-May-11 09-Aug-11 60.0d CTF700 3571.00 CTF Incorporate Review Comments CTF700 CTF Incorporate Review Comments 26-Jul-11 09-Aug-11 10.0d CTF690 CTF695, CTF705, 85.00 CTF710 CTF705 CTF DOE Review 09-Aug-11 04-Oct-11 40.0d CTF700 3531.00 CTF DOE Review |+•∎ 40.0d CTF700 ۲ġ CTF Mission Validation CTF710 CTF Mission Validation, IPR 09-Aug-11 04-Oct-11 CTF715 85.0d CTF715 CTF Critical Decision - 3 04-Oct-11 0.0d CTF710, CTF655 CTF720 85.0d CTF Critical Decision CTF FY 12 Continuing Resolution CTF720 CTF FY 12 Continuing Resolution 04-Oct-11 10-Jan-12 70.0d CTF715 CTF725 85.0d CTF Issue Construction Documents CTF845, CTF850. CTF725 0.0d CTF720 85.00 CTF Issue Construction Documents 10-Jan-12 CTF855, CTF860, CTF875, CTF885, CTF895, CTF865, CTF870, CTF880 CTF890 C.Q.20.40.01.01 CTF Final Design Dwgs & Const Specs 20-Sep-10 27-Jun-11 200.0d 3602.0 Q.20.40.01.01 CTF Final Design Dwgs & Const Specs * * TASK filter: All Activities Page 53 of 55 Remaining Level of Effort Actual Work Critical Remaining Work Actual Level of Effort Remaining Work Start Constraint (c) Primavera Systems, Inc.

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		SCHEDULE											9-29-2008													
	Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009	2010	2011	1	2012	2013	2014	4 2015	2016	2017	2018	2019	202	202	1			
CTF730	CTF Loop & Test Equipment	20-8ep-10	27-Jun-11	200.0d	CTF490	CTF685, CTF740, CTF745, CTF750, CTF755, CTF770, CTF780, CTF790, CTF820	85.0d					dTF I	Loop & Te	st Equip	ment											
CTF735	Civil & Site Prep Final Design	20-Sep-10	07-Mar-11	120.0d	CTF490	CTF840	429.0d			-	CIV	4 8	te Prep F	inal Desi												
CTF740	High-Bay Facility	10-Jan-11	27-Jun-11	120.0d	CTF730, CTF675		3602.0d			- 4	-	ligh-	Bay Facil	ty												
CTF745	Administrative Support Facility	10-Jan-11	27-Jun-11	120.0d	CTF730		3602.0d				-	dmi	nistrative	Support	acility											
CTF750	Warehouse, Chem Prep & Storage Building	10-Jan-11	27-Jun-11		CTF730		3602.0d								& Store	ge Building										
CTF755	Water Process Building	10-Jan-11	27-Jun-11		CTF730		3602.0d				_		r Process	Building												
CTF760	Sewer System		07-Mar-11		CTF490		3682.0d			-			ystem	.												
CTF765 CTF770	Potable Water System	20-8ep-10	07-Mar-11		CTF490		3682.0d					JL	Water Sys													
CTF770 CTF775	Generator Building	10-Jan-11 20-Sep-10	27-Jun-11		CTF730 CTF490		3602.0d				_		rator Bulk	-												
CTF775 CTF780	Fire Water System	20-Sep-10 10-Jan-11	27-Jun-11		CTF730		3682.0d 3602.0d			-۲			er System ng Tower													
CTF785	Cooling Towers Raw Water System		27-Jun-11 07-Mar-11		CTF490		3602.0d				Ray		ter Syster													
CTF790	Electrical and Communication Distribution		27-Jun-11		CTF730	CTF690	85.0d			- 1 -			rical and Q		cation D	istribution										
	CTF Procurement	20-Sep-10		341.0d			3461.0d					-	C.Q.20.4													
CTF800	CTF Test Loop Procurement & Fab	20-Sep-10		341.0d	CTF490	CTF815	3362.0d			-			CTF Test													
CTF805	CTF Long-Lead Procurement, cont.	27-Sep-10	06-Jan-12	334.0d	CTF635		3463.0d			_ ⊷_		F	CTF Long	-Lead P	rocurem	ent, cont.										
Q.20.50 Rese	arch and Development			0.0d			0.0d																			
Q.20.60 CTF	Construction	22-8ep-10	23-Aug-13	762.0d			3038.0d			- -		+		-		0 CTF Con										
C.Q.20.60.10	CTF Project Management Support - Construction	22-Sep-10	23-Aug-13	762.0d			3038.0d			-				-	0,20.6	0.10 CTF F	roject Man	agement 8	upport - C	onstruction	1					
CTF810	CTF PDS Funding Authorization FY 13 Update	22-8ep-10	14-Jun-11	190.0d	CTF450		3610.0d				•	CTF F	PDS Fund	ing Autho	orization	FY 13 Upd:	ite									
CTF815	CTF Test Loop Procurements & Fab Cont.	10-Jan-12	28-May-12		CTF800		3362.0d					┝╼┏				ements & F	sb Cont.									
CTF820	Off Site Test Loop Fabrication	27-Jun-11	28-May-12		CTF730	CTF835	85.0d						_ o n s													
CTF825	CTF Test and Turnover	31-May-13	23-Aug-13	60.0d	CTF835, CTF840, CTF8545, CTF850, CTF855, CTF850, CTF865, CTF870, CTF875, CTF880, CTF875, CTF880, CTF885, CTF890, CTF895	CTF830	85.0d								OTF Tes	t and Turno	er									
CTF830	CTF Construction Complete		23-Aug-13	0.04	CTF825	CTF900, HP8745, HT8750	85.0d					 		177	CTF Cor	struction Co	mpiete									
C.Q.20.60.02	CTF Construct, Equipment Install, Commission	10-Jan-12	31-May-13	363.0d			85.0d							c c	2,20.60.	02 CTF Car	struct, Equ	upment ins	tall, Comm	nission						
CTF835	CTF Loop & Test Equipment	28-May-12	31-May-13	264.0d	CTF820	CTF825	85.0d					'	-	= •	F Loop (& Test Equip	ment									
CTF840	Civil & Site Prep Final Design	19-Jan-12	19-Dec-12		CTF650, CTF735	CTF825	201.0d					-			1	Final Desig	n									
CTF845	High-Bay Facility	10-Jan-12	12-Dec-12		CTF725	CTF825	207.0d							High-Ba	y Facilit	r										
CTF850 CTF855	Administrative Support Facility	10-Jan-12	12-Dec-12		CTF725	CTF825	207.0d							Administ	trative 3	upport Facil										
CTF855 CTF850	Warehouse, Chem Prep & Storage Building Water Process Building	10-Jan-12 10-Jan-12	12-Dec-12 12-Dec-12		CTF725 CTF725	CTF825 CTF825	207.0d								use, Che rdcess E	em Prep & S	orage Bull	ang								
CTF865	Sewer System	10-Jan-12 10-Jan-12	12-Dec-12 12-Dec-12		CTF725	CTF825	207.0d							Bewer B		aliang										
CTF870	Potable Water System	10-Jan-12	12-Dec-12		CTF725	CTF825	207.0d								Water S	vstem										
CTF875	Generator Building	10-Jan-12	12-Dec-12		CTF725	CTF825	207.0d							Generat	or Buildi	ng										
CTF880	Fire Water System	10-Jan-12	12-Dec-12		CTF725	CTF825	207.0d								ter Syste											
CTF885	Cooling Towers	10-Jan-12	31-May-13		CTF725	CTF825	85.0d					-		ы і	oling To											
CTF890	Raw Water System	10-Jan-12	12-Dec-12		CTF725	CTF825	207.0d					-			ter Syst											
CTF895	Electrical and Communication Distribution	10-Jan-12	31-May-13	363.0d	CTF725	CTF825	85.0d					╘╾┏		E	cirical a	nd Commun	ication Dist	ribution								
Q.20.70 CTF	Start-up & Initial Operations	23-Aug-13	24-Jan-14	110.0d			85.0d								- C.Q	20.70 CTF	Start-up &	initial Oper	ations							
CTF900	DOE CTF ORR		18-Oct-13		CTF830	CTF910	85.0d							-9	DOE C	TF ORR										
CTF910	DPE Review		13-Dec-13		CTF900	CTF915	85.0d							_ <u> </u> =	DPE											
CTF915	OECM/EIR Review	18-Oct-13	13-Dec-13	40.0d	CTF910	CTF920	85.0d						har a r	<u>_</u>	- i	//EIR Revie	w									
emaining Level	of Effort Actual Work	Critical R	emaining Wo	rik		F	Page 54 of 5	5					TAS	K filter: /	Ali Activ	/1066										

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	IGNP INTEGRATED PLANNING SCHEDULE											9-29-2008												
	ctivity ID		Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009	2010	2011	2012	2013	20	014 2015	2016	201	17 2018	2019	2020	2021	2022 202
C 22.80 C 77 Outo V-rome is abula to 200 mm V-rome is abua to 200 mm V-rome is abula to 200 mm		CTF92D	Critical Decision - 4 (Start of Operations)	13-Dec-13	24-Jan-14			CTF925, HT8760, MTH295	85.Dd						<u>د</u>		ritical Decision	4 (Start of	Operat	tions)				
		C.Q.20.80 CTF Operati	on	24-Jan-14	19-Jun-15	365.0d			2563.0d								C.	Q.20.80 C	TF Ope	eration				
				24-Jan-14	19-Jun-15	365.Dd	CTF920	CTF930							l									
		C.Q.20.90 CTF Dⅅ		19-Jun-15	19-Jun-15	0.0d			2563.0d								- c.	Q.20.90 C	TF D&D	00				
- Remaining Level of Elifort			CTF DD&D		19-Jun-15	0.0d	CTF925		2563.0d								- c	IF DD&D						
					-	ork			Page 55 of 5	55				TAS	SK filter:	All Ac	tivities							
Actual Level of Effort Remaining Work C Start Constraint (c) Primavera Systems, Inc					-																	(0)	Primaver	a Systems Inc