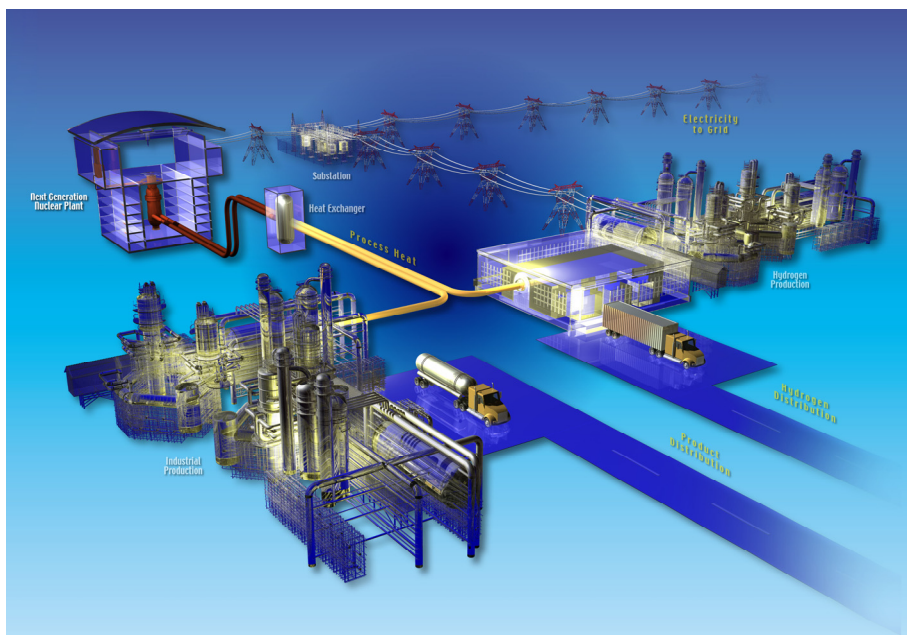


Plan

Next Generation Nuclear Plant (NGNP) Integrated Schedule Development Plan



The INL is a U.S. Department of Energy National Laboratory operated by Battelle Energy Alliance.

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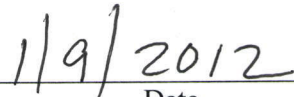
NGNP Integrated Schedule Development Plan

PLN-2924

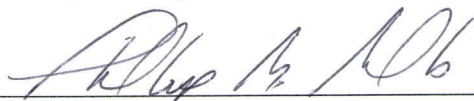
Approved by:



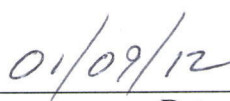
 Gregory Jennings
 Author, Planning and Controls



 Date



 Phillip Mills
 NGNP Engineering Director



 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

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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 Energy (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 High Temperature 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 Safeguards (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 will 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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NGNP INTEGRATED PLANNING SCHEDULE

9-29-2008

Activity ID	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	2023	
C Idaho National Laboratory																								
C.Q. INL Projects																								
C.Q.10 Next Generation Nuclear Plant																								
C.Q.10.10 Owners Engineer																								
C.Q.10.10.10 Program Management																								
C.Q.10.10.10.01 CD Preparations & Submittals																								
PM100	NGNP CD-0	01-Oct-07	01-Oct-07	0.0d			4577.0d																	
PM105	Project Management/Execution Plan	21-Jul-08*	30-Sep-08	52.0d		PM150	60.0d																	
PM110	Update Project Execution/Management P...	02-Oct-08	04-Feb-09	90.0d	PM150	PM120	709.0d																	
PM115	CD-1 Preparation & Submittal	15-Feb-11	04-Jul-11	100.0d	PM120		3596.0d																	
PM120	NGNP CD-1		04-Jul-11	0.0d	PM110, PM180, PM185, PM190, PM200, PM205, PM210, PM215, PM245, PM220	PM270, PM305, PM115	81.0d																	
PM130	NGNP CD-2		25-Apr-14	0.0d	PM310	PM400	59.0d																	
PM135	NGNP CD-3		21-Mar-17	0.0d	PM440	PM500	2.0d																	
PM140	NGNP CD-4		10-Dec-20	0.0d	PM520	PM550	20.0d																	
C.Q.10.10.10.02 Conceptual Design PM Support																								
PM145	Start Conceptual Design	01-May-08*		0.0d		SE325, SE330, SE335, SE340, SE345, SE350, SE355, SE360, PM235, PM240, PE100, PE105, PE110	69.0d																	
PM150	FY08 Start Execution	02-Oct-08*		0.0d	PM105, SE320	SA280, NH0095, NH0125, NH0145, NH0155, NH0185, NH0210, NH0235, NH0245, NH0260, NH0280, NH0295, NH0315, NH0335, NH0355, NH0375, NH0395, NH0415, NH0435, NH0455, NH0475, NH0495, NH0515, NH0535, NH0555, NH0575, NH0595, HT0250, HT0270, HT0290, HT0315, HT0335, HT0355, HT0375, HT0395, HT0415, PC0105, PC0125, PC0145, PC0165, PC0185, PC0205, PM180, PM185, PE130, PE135, PM110, PM190, PM200, PM205, PM210, PM215, PM245, PM255, PM250, SA280, SA480	59.0d																	
PM155	Conceptual Scope of Work	23-Jun-08*	04-Aug-08	31.0d		PM160	701.0d																	
PM160	INL Conceptual SOW Review	05-Aug-08	01-Sep-08	20.0d	PM155	PM165, PM170	701.0d																	
PM165	DOE Conceptual Review & Project Validat...	02-Sep-08	24-Nov-08	60.0d	PM160	PM170, PM220	701.0d																	
PM170	Validation/Design Baseline, IPR (optional)	25-Nov-08	22-Dec-08	20.0d	PM165, PM160	PM175, PM220	701.0d																	

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■ Actual Level of Effort
 ■ Remaining Work
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Activity ID	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	2023
PM175	DOE or PPP Issues Conceptual BOW & ...	02-Oct-08	22-Dec-08	0.0d	PM170	PM220	701.0d																
PM180	Acquisition Strategy	02-Oct-08	04-Feb-09	90.0d	PM150	PM120	709.0d																
PM185	Public Involvement/Public Relations Plan	02-Oct-08	04-Feb-09	90.0d	PM150	PM120	709.0d																
PM190	Configuration Management Plan	02-Oct-08	04-Feb-09	90.0d	PM150	PM120	709.0d																
PM200	Preliminary Hazard Analysis Report	02-Oct-08	04-Feb-09	90.0d	PM150	PM120	709.0d																
PM205	Waste Minimization/Prevention Plan	02-Oct-08	04-Feb-09	90.0d	PM150	PM120	709.0d																
PM210	Waste Management Plan	02-Oct-08	04-Feb-09	90.0d	PM150	PM120	709.0d																
PM215	Draft Decontamination & Decommissionin...	02-Oct-08	04-Feb-09	90.0d	PM150	PM120	709.0d																
PM220	NGNP Conceptual Design Complete		04-Jul-11	0.0d	SE325, SE330, SE335, SE340, SE345, SE350, SE135, SE200, SE260, PM155, PM170, PM175, SE285, NH9090, HT9345, HPS265, PC9100, BOP075, SE365, SE355, SE360, HP8010, MAT0866, PE125, PE130, PE135, PM260, PM265, PM235, PM240, PM250, PE100, PE105, PE110	PM120, LR260	41.0d																
PM230	Reactor Type Selection		01-Oct-09*	0.0d		LR140, LR260	171.0d																
C.Q.10.10.10.02.01	Project Cost & Schedule	01-May-08	25-May-11	773.0d			69.0d																
PM235	Integrated Schedule	01-May-08	25-May-11	800.0d	PM145	PM220	69.0d																
PM240	Cost & Schedule Support	01-May-08	25-May-11	800.0d	PM145	PM220	69.0d																
C.Q.10.10.10.02.02	Quality Assurance	02-Oct-08	08-Jun-11	685.0d			99.0d																
PM245	Quality Assurance Program Plan	02-Oct-08	08-Jun-11	700.0d	PM150	PM120	99.0d																
PM250	Quality Level Determinations	02-Oct-08	08-Jun-11	700.0d	PM150	PM220	69.0d																
C.Q.10.10.10.02.03	Security	02-Oct-08	10-Jun-09	165.0d			579.0d																
PM255	Preliminary Cyber Security Plan	02-Oct-08	10-Jun-09	180.0d	PM150	PM265, PM260	579.0d																
PM260	Preliminary Security Vulnerability Assessment Report	02-Oct-08	10-Jun-09	180.0d	PM255	PM220	579.0d																
PM265	Preliminary Safeguards & Security Plan	02-Oct-08	10-Jun-09	180.0d	PM255	PM220	579.0d																
C.Q.10.10.10.03	Preliminary Design PM Support	06-Jul-11	25-Apr-14	733.0d			7.0d																

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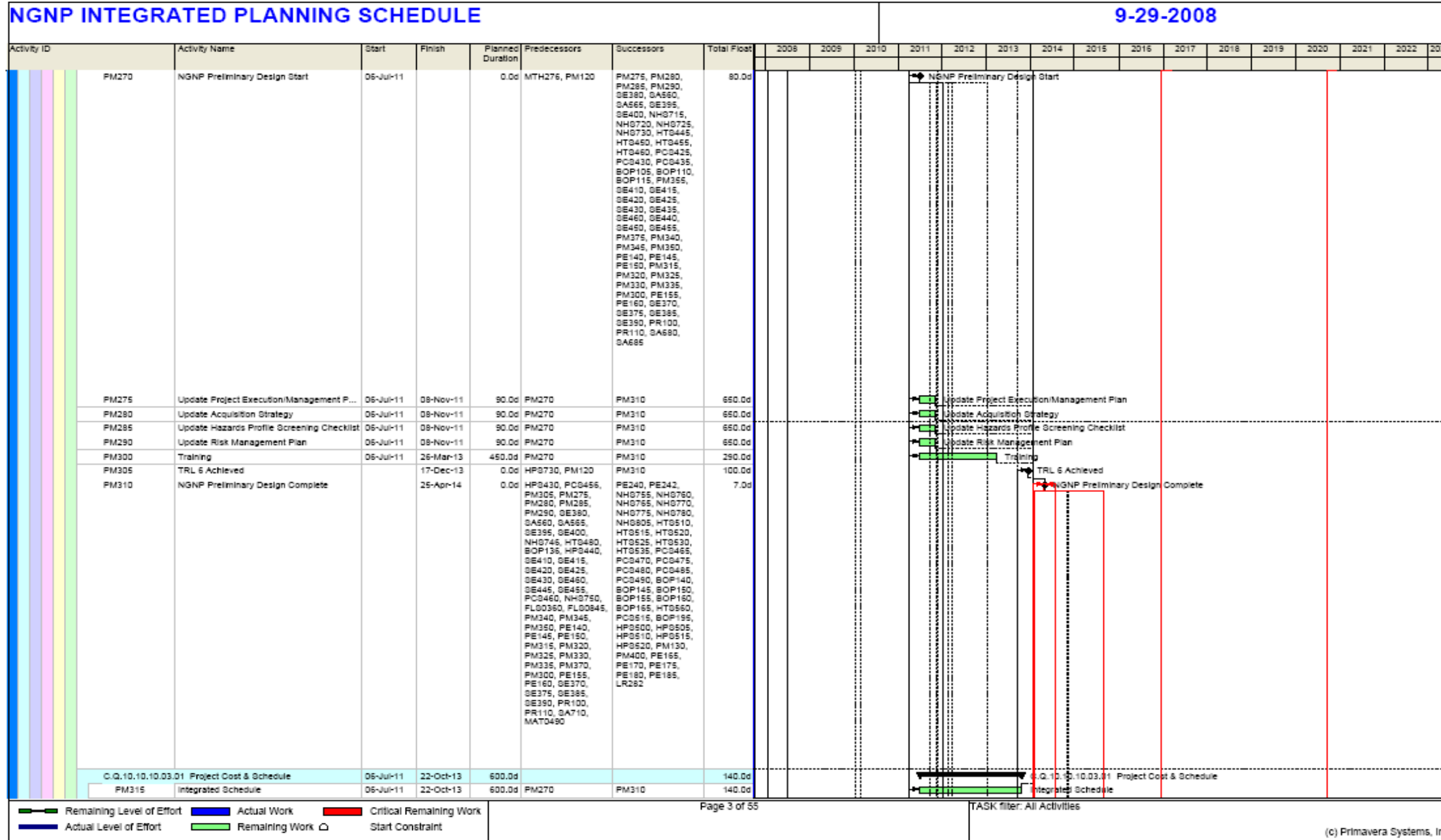
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Activity ID	Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
PM320	Cost & Schedule Support	06-Jul-11	22-Oct-13	600.0d	PM270	PM310	140.0d																
C.Q.10.10.10.03.02	Quality Assurance	06-Jul-11	22-Oct-13	600.0d			140.0d																
PM325	Update QAPP	06-Jul-11	08-Nov-11	90.0d	PM270	PM310	650.0d																
PM330	Quality Level Determinations	06-Jul-11	13-Mar-12	180.0d	PM270	PM310	560.0d																
PM335	Quality Support/Surveillances	06-Jul-11	22-Oct-13	600.0d	PM270	PM310	140.0d																
C.Q.10.10.10.03.03	Security	06-Jul-11	08-Nov-11	90.0d			650.0d																
PM340	Update Preliminary Cyber Security Plan	06-Jul-11	08-Nov-11	90.0d	PM270	PM310	650.0d																
PM345	Update Preliminary Facility/Project Security Plan	06-Jul-11	08-Nov-11	90.0d	PM270	PM310	650.0d																
PM350	Update Preliminary Vulnerability Assess...	06-Jul-11	08-Nov-11	90.0d	PM270	PM310	650.0d																
C.Q.10.10.10.03.04	EPC Scope of Work	06-Jul-11	12-Oct-11	71.0d			669.0d																
PM355	EPC Scope of Work	06-Jul-11	17-Aug-11	31.0d	PM270	PM360	669.0d																
PM360	INL EPC SOW Review	18-Aug-11	14-Sep-11	20.0d	PM355	PM365	669.0d																
PM365	DOE EPC Review & Project Validation	15-Sep-11	12-Oct-11	20.0d	PM360	PM370	669.0d																
PM370	DOE or PPP Issues EPC SOW & RFP	12-Oct-11	0.0d	0.0d	PM365	PM310	669.0d																
C.Q.10.10.10.03.05	HP3 RFP	06-Jul-11	13-Mar-12	180.0d			200.0d																
PM375	Develop RFP	06-Jul-11	27-Sep-11	60.0d	HP3265, PM270	PM380	200.0d																
PM380	Issue RFP	27-Sep-11	0.0d	0.0d	PM375	PM385	200.0d																
PM385	Bidders Evaluate RFP	28-Sep-11	20-Dec-11	60.0d	PM380	PM390	200.0d																
PM390	Receive Proposals	20-Dec-11	0.0d	0.0d	PM385	PM395	200.0d																
PM395	Evaluate Proposals	21-Dec-11	13-Mar-12	60.0d	PM390	PM396	200.0d																
PM396	Award Design Contract	13-Mar-12	0.0d	0.0d	PM395	HP3430, HP3435	200.0d																
C.Q.10.10.10.04	Final Design PM Support	28-Apr-14	21-Mar-17	757.0d			2105.0d																
PM400	NGNP Final Design Start	28-Apr-14	0.0d	0.0d	PM310, PM130	GE500, GE505, GE510, GE515, GE520, GE525, GE535, GE530, PM435, PM430, PM445, PM450, PM455, PM460, PM465, PM410, PM415, PM420, PM470, PM475, PM480, GE465, GE470, GE475, GE480	59.0d																
PM405	TRL 7 Achieved	28-Nov-16	0.0d	0.0d	GE490		2187.0d																
PM410	Update Project Execution/Management P...	28-Apr-14	29-Aug-14	90.0d	PM400	PM440	669.0d																
PM415	Update Acquisition Strategy	28-Apr-14	29-Aug-14	90.0d	PM400	PM440	669.0d																
PM420	Update Risk Management Plan	28-Apr-14	29-Aug-14	90.0d	PM400	PM440	669.0d																
PM430	Environmental, Safety & Health	28-Apr-14	30-Dec-16	700.0d	PM400	PM440	59.0d																
PM435	Training	28-Apr-14	02-Jan-15	180.0d	PM400	PM440	579.0d																

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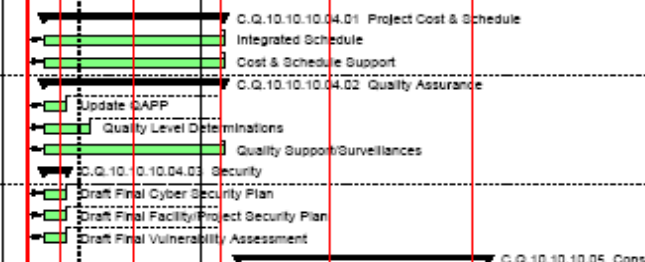
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PM440	NGNP Final Design Complete		21-Mar-17	0.0d	NHG800, HTG555, PC8510, BOP190, PM410, PM415, PM420, SE475, HP3560, HP3540, SE500, SE505, SE510, SE515, SE520, SE525, SE535, SE530, PM470, PM475, PM480, PE165, PE170, PE175, PM435, PM430, PM445, PM450, PM455, PM460, PM465, SE495, SE470, SE485, SE495, PE180, PE185, FLG0665	PM135, LR341	2.0d																
C.Q.10.10.10.04.01	Project Cost & Schedule	28-Apr-14	30-Dec-16	700.0d			59.0d																
PM445	Integrated Schedule	28-Apr-14	30-Dec-16	700.0d	PM400	PM440	59.0d																
PM450	Cost & Schedule Support	28-Apr-14	30-Dec-16	700.0d	PM400	PM440	59.0d																
C.Q.10.10.10.04.02	Quality Assurance	28-Apr-14	30-Dec-16	700.0d			59.0d																
PM455	Update QAPP	28-Apr-14	29-Aug-14	90.0d	PM400	PM440	669.0d																
PM460	Quality Level Determinations	28-Apr-14	02-Jan-15	180.0d	PM400	PM440	579.0d																
PM465	Quality Support/Surveillances	28-Apr-14	30-Dec-16	700.0d	PM400	PM440	59.0d																
C.Q.10.10.10.04.03	Security	28-Apr-14	29-Aug-14	90.0d			669.0d																
PM470	Draft Final Cyber Security Plan	28-Apr-14	29-Aug-14	90.0d	PM400	PM440	669.0d																
PM475	Draft Final Facility/Project Security Plan	28-Apr-14	29-Aug-14	90.0d	PM400	PM440	669.0d																
PM480	Draft Final Vulnerability Assessment	28-Apr-14	29-Aug-14	90.0d	PM400	PM440	669.0d																
C.Q.10.10.10.05	Construction PM Support	22-Mar-17	10-Dec-20	972.0d			0.0d																

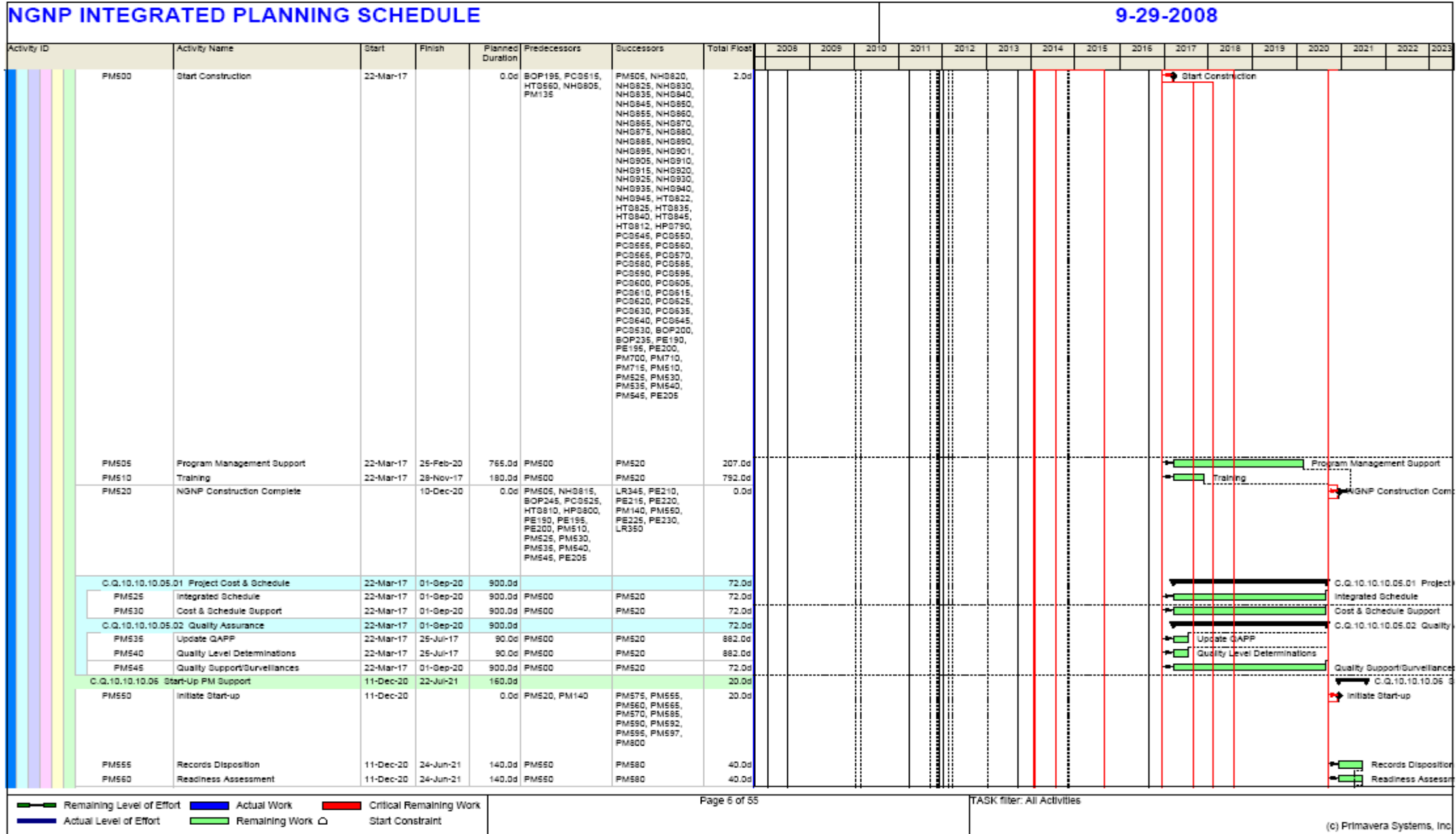


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█ Remaining Level of Effort
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 █ Remaining Work
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9-29-2008

Activity ID	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	2023
PM565	Operational Readiness Review	11-Dec-20	24-Jun-21	140.0d	PM560	PM580	40.0d																
PM570	Final Project Closeout Report	11-Dec-20	24-Jun-21	140.0d	PM560	PM580	40.0d																
PM575	Training	11-Dec-20	24-Jun-21	140.0d	PM560	PM580	40.0d																
PM580	Start-up Complete		22-Jul-21	0.0d	PM575, PM565, PM560, PM555, PM570, PM580, PM555, PM590, PM592, PM595, PM597	PM610	20.0d																
C.Q.10.10.10.06.01	Project Cost & Schedule	11-Dec-20	24-Jun-21	140.0d			40.0d																
PM585	Integrated Schedule	11-Dec-20	24-Jun-21	140.0d	PM560	PM580	40.0d																
PM590	Cost & Schedule Support	11-Dec-20	24-Jun-21	140.0d	PM560	PM580	40.0d																
C.Q.10.10.10.06.02	Security	11-Dec-20	24-Jun-21	140.0d			40.0d																
PM592	Final Cyber Security Plan	11-Dec-20	24-Jun-21	140.0d	PM560	PM580	40.0d																
PM595	Final Facility/Project Security Plan	11-Dec-20	24-Jun-21	140.0d	PM560	PM580	40.0d																
PM597	Final Security Vulnerability Assessment	11-Dec-20	24-Jun-21	140.0d	PM560	PM580	40.0d																
C.Q.10.10.10.07	Operations PM Support	03-Sep-21	15-Apr-25	943.0d			0.0d																
PM600	Initiate Operations	03-Sep-21		0.0d	PM610	PM605, PM625, PM610, PM615, PM620, PM640, PM645, PM650, PE235	193.0d																
PM605	Operations Management	03-Sep-21	18-Jul-24	750.0d	PM600	PM640	193.0d																
PM610	Spent Fuel Management Plan	03-Sep-21	18-Jul-24	750.0d	PM600	PM640	193.0d																
PM615	Waste Management	03-Sep-21	18-Jul-24	750.0d	PM600	PM640	193.0d																
PM620	Long-Term Monitoring	03-Sep-21	18-Jul-24	750.0d	PM600	PM640	193.0d																
PM625	Training	03-Sep-21	18-Jul-24	750.0d	PM600	PM640	193.0d																
PM640	NGNP Hot Operations Complete		15-Apr-25	0.0d	BOP900, HP9900, HT9900, NH9900, PC9900, PE900, PM900, PM600, PM605, PM625, PM610, PM615, PM620, PM645, PM650, PE235	BOP1000, HP91000, HP91000, HT91000, NH91000, PC91000, PE1000, PM1000	0.0d																
C.Q.10.10.10.07.01	Project Cost & Schedule	03-Sep-21	09-May-24	700.0d			243.0d																
PM645	Integrated Schedule	03-Sep-21	09-May-24	700.0d	PM600	PM640	243.0d																
PM650	Cost & Schedule Support	03-Sep-21	09-May-24	700.0d	PM600	PM640	243.0d																
C.Q.10.10.12	Program Engineering	01-Oct-07	21-Dec-23	4307.0d			343.0d																
C.Q.10.10.12.01	Conceptual Design PE Support	01-Oct-07	25-May-11	926.0d			3624.0d																
C.Q.10.10.12.01.01	Project Engineering	01-May-08	25-May-11	773.0d			69.0d																
PE100	PE Support to Design	01-May-08	25-May-11	800.0d	PM145	PM220	69.0d																
PE105	Organize & Charter BEA NNSP Design Code Committee	01-May-08	07-Jan-09	180.0d	PM145	PM220	689.0d																
PE110	Code of Record Study/Final Decision Analysis	01-May-08	07-Jan-09	180.0d	PM145	PM220	689.0d																
PE115	Design Control Plan/Engineering Procedures	01-May-08	08-Aug-08	72.0d	SE350	PE120	797.0d																
PE120	Conceptual Design Work Plan	01-May-08	08-Aug-08	72.0d	PE115	PE125	797.0d																
PE125	Conceptual Design Schedule	01-May-08	08-Aug-08	72.0d	PE120	PM220	797.0d																
PE130	Code of Record Study	02-Oct-08	04-Feb-09	90.0d	PM150	PM220	669.0d																
PE135	Licensing Technical Support	02-Oct-08	04-Feb-09	90.0d	PM150	PM220	669.0d																
C.Q.10.10.12.01.02	Systems Engineering	01-Oct-07	30-Sep-09	496.0d			4054.0d																
C.Q.10.10.12.01.02.01	Syst. Engineer & Proj Definition ...	01-Oct-07	30-Sep-09	496.0d			4054.0d																
C.Q.10.10.12.01.02.01.01	Requirements Development Support Tasks	01-Oct-08	22-Jun-09	174.0d			571.0d																
SE100	Identify Requirements Documents	01-Oct-08	14-Oct-08	10.0d		SE105	571.0d																

█ Remaining Level of Effort
 █ Actual Work
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 █ Start Constraint

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TASK filter: All Activities

(c) Primavera Systems, Inc

Idaho National Laboratory

NGNP INTEGRATED SCHEDULE DEVELOPMENT PLAN

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NGNP INTEGRATED PLANNING SCHEDULE

9-29-2008

Activity ID	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	2023	
SE105	Finalize DOORS Requirements Architect...	15-Oct-08	28-Oct-08	10.0d	SE100	SE110, SE115	571.0d																	
SE110	Derive Integrated Requirements	29-Oct-08	03-Mar-09	90.0d	SE105	SE135	650.0d																	
SE115	Populate Database	29-Oct-08	03-Mar-09	90.0d	SE105	SE120, SE135	571.0d																	
SE120	Draft Requirements Report	10-Dec-08	14-Apr-09	90.0d	SE115	SE125, SE122	571.0d																	
SE122	Assumptions Tracking System	10-Dec-08	14-Apr-09	90.0d	SE120	SE135	620.0d																	
SE125	Review Requirements Management Report	15-Apr-09	26-May-09	30.0d	SE120	SE130	571.0d																	
SE130	Issue Requirements Management Report	27-May-09	09-Jun-09	10.0d	SE125	SE135	571.0d																	
SE135	Requirements Management Report Complete		22-Jun-09	0.0d	SE130, SE110, SE115, SE122	PM220	571.0d																	
C.Q.10.10.12.01.02.01.02	Risk Register and Risk Ma...	01-Oct-08	30-Sep-09	246.0d			499.0d																	
SE150	Identify Risk Documents	01-Oct-08	29-Oct-08	20.0d		SE155	499.0d																	
SE155	Finalize Risk Register Architecture	29-Oct-08	09-Dec-08	30.0d	SE150	SE160	499.0d																	
SE160	Populate Risk Register	10-Dec-08	14-Apr-09	90.0d	SE155	SE165, SE170	499.0d																	
SE165	Finalize Risk Procedure	10-Dec-08	06-Jan-09	20.0d	SE160	SE200	690.0d																	
SE170	Compare Other Risk Methods	21-Jan-09	14-Apr-09	60.0d	SE160	SE175	499.0d																	
SE175	Conduct Risk Workshops	15-Apr-09	07-Jul-09	60.0d	SE170	SE180, SE185	499.0d																	
SE180	Develop Risk Response	15-Apr-09	18-Aug-09	90.0d	SE175	SE200	530.0d																	
SE185	Draft Risk Management Plan	09-Jul-09	18-Aug-09	30.0d	SE175	SE190	499.0d																	
SE190	Review Risk Management Plan	19-Aug-09	16-Sep-09	21.0d	SE185	SE195	499.0d																	
SE195	Issue Risk Management Plan	17-Sep-09	30-Sep-09	10.0d	SE190	SE200	499.0d																	
SE200	Risk Management Plan Complete		30-Sep-09	0.0d	SE195, SE165, SE180	PM220	499.0d																	
C.Q.10.10.12.01.02.01.03	TRL Development and Val...	01-Oct-08	11-Aug-09	210.0d			4090.0d																	
SE205	Finalize TRL Process	01-Oct-08	03-Oct-08	3.0d		SE210, SE215	567.0d																	
SE210	Update TRL Calculator	06-Oct-08	21-Nov-08	35.0d	SE205	SE230	4247.0d																	
SE215	Convene Validation Board	06-Oct-08	17-Oct-08	10.0d	SE205	SE220	567.0d																	
SE220	Validate TRL Baseline	20-Oct-08	31-Oct-08	10.0d	SE215	SE225, SE240	567.0d																	
SE225	Issue Validated TRL Baseline	31-Oct-08	0.0d	0.0d	SE220	SE230	4090.0d																	
SE230	Update TRL Baseline (Rev 1)	01-Jul-09	11-Aug-09	30.0d	SE225, SE210	SE275	4090.0d																	
C.Q.10.10.12.01.02.01.04	Technology Development ...	20-Oct-08	09-Jan-09	47.0d			567.0d																	
SE240	Finalize Vendor TDRMs	20-Oct-08	31-Oct-08	10.0d	SE230	SE245, SE250, SE265	567.0d																	
SE245	Consolidate Decision Discriminators	03-Nov-08	28-Nov-08	20.0d	SE240	SE255	577.0d																	
SE250	Formulate Technology Alternatives	03-Nov-08	12-Dec-08	30.0d	SE240	SE255	567.0d																	
SE255	Finalize TDRMs for Project	15-Dec-08	09-Jan-09	20.0d	SE250, SE245	SE260	567.0d																	
SE260	Issue NNGP Tech Dev Road maps		09-Jan-09	0.0d	SE255, SE275, SE270	SE280, PM220	567.0d																	
SE265	R&D Workshops on TDRMs	03-Nov-08	12-Dec-08	30.0d	SE240	SE270	567.0d																	
SE270	Vendor Workshops on TDRMs	15-Dec-08	09-Jan-09	20.0d	SE265	SE260	567.0d																	
SE275	Update TDRMs (Rev 1)	20-Oct-08	09-Jan-09	60.0d	SE230	SE260	567.0d																	
C.Q.10.10.12.01.02.01.05	Design Data Needs (DDN...	12-Jan-09	26-Jun-09	120.0d			567.0d																	
SE280	Update DDNs	12-Jan-09	03-Apr-09	60.0d	SE260	SE285	567.0d																	
SE285	DDN Database	06-Apr-09	26-Jun-09	60.0d	SE280	PM220	567.0d																	
C.Q.10.10.12.01.02.01.07	FY08 Engineering Studies	01-Oct-07	22-May-08	169.0d			346.0d																	
SE290	Phase Studies Work Scope & Award	01-Oct-07	30-Nov-07	45.0d		SE295, SE300, SE305, SE310, SE315	153.0d																	
SE295	Nuclear Heat Supply System F&ORs	03-Dec-07	08-Feb-08	50.0d	SE290	NHG095	447.0d																	
SE300	IHX & Secondary Heat Transport Loop Alternatives	03-Dec-07	08-Feb-08	50.0d	SE290	NHG315	447.0d																	
SE305	RPV & IHX Pressure Vessel Alternatives	03-Dec-07	08-Feb-08	50.0d	SE290	NHG095	447.0d																	
SE310	Contamination Control Study	03-Dec-07	08-Feb-08	50.0d	SE290	SE320	153.0d																	
SE315	Core Design Study & Design Workplan	03-Dec-07	02-May-08	110.0d	SE290	NHG125	387.0d																	

█ Remaining Level of Effort
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 ◻ Start Constraint

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Activity ID	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	2023
SE320	Reactor Contamination & Building Functions	11-Feb-08	22-May-08	74.0d	SE310	PM150	153.0d																
C.Q.10.10.12.01.03	Technical Discipline Support (Conceptual)	01-May-08	25-May-11	773.0d			69.0d																
SE325	Structural/Seismic	01-May-08	25-May-11	800.0d	PM145	PM220	69.0d																
SE330	Piping/Mechanical Systems	01-May-08	25-May-11	800.0d	PM145	PM220	69.0d																
SE335	HVAC	01-May-08	25-May-11	800.0d	PM145	PM220	69.0d																
SE340	Electrical	01-May-08	25-May-11	800.0d	PM145	PM220	69.0d																
SE345	I&C	01-May-08	25-May-11	800.0d	PM145	PM220	69.0d																
SE350	ASME RPV Code Case Prep.	01-May-08	25-May-11	800.0d	PM145	PE115, PM220	69.0d																
SE355	ASME High Temp Metals (517, 800H) Code Case Prep.	01-May-08	25-May-11	800.0d	PM145	PM220	69.0d																
SE360	ASME Graphite Baseline (Beginning-of-Life) Code Case Prep.	01-May-08	02-Sep-08	89.0d	PM145	PM220	780.0d																
SE365	ASME B&PV Code Consultation	01-May-08	25-May-11	800.0d	PM145	PM220	69.0d																
C.Q.10.10.12.02	Preliminary Design FE Support	05-Jul-11	25-Apr-14	733.0d			19.0d																
C.Q.10.10.12.02.01	Project Engineering	05-Jul-11	22-Oct-13	600.0d			140.0d																
PE140	EPC Work Plan	05-Jul-11	08-Nov-11	90.0d	PM270	PM310	650.0d																
PE145	Update Requirements Management Plan	05-Jul-11	08-Nov-11	90.0d	PM270	PM310	650.0d																
PE150	Preliminary Design Schedule	05-Jul-11	08-Nov-11	90.0d	PM270	PM310	650.0d																
PE155	FE Engineering Support to Design	05-Jul-11	22-Oct-13	600.0d	PM270	PM310	140.0d																
PE160	BEA NGNP Design Code Committee	05-Jul-11	13-Mar-12	180.0d	PM270	PM310	560.0d																
C.Q.10.10.12.02.02	Systems Engineering	05-Jul-11	04-Nov-13	608.0d			144.0d																
C.Q.10.10.12.02.02.01	Requirements Development Support Tasks	05-Jul-11	08-Nov-11	90.0d			650.0d																
SE370	Requirements Development Update	05-Jul-11	08-Nov-11	90.0d	PM270	PM310	650.0d																
C.Q.10.10.12.02.02.02	Risk Register and Risk Management Support Tasks	05-Jul-11	08-Nov-11	90.0d			650.0d																
SE375	Risk Management Plan Update	05-Jul-11	08-Nov-11	90.0d	PM270	PM310	650.0d																
C.Q.10.10.12.02.02.03	Technology Development Road Mapping	05-Jul-11	08-Nov-11	90.0d			650.0d																
SE380	TRL Baseline Update	05-Jul-11	08-Nov-11	90.0d	PM270	PM310	650.0d																
C.Q.10.10.12.02.02.04	Design Data Needs (DDNs) Support Tasks	05-Jul-11	08-Nov-11	90.0d			650.0d																
SE385	Update DDNs	05-Jul-11	08-Nov-11	90.0d	PM270	PM310	650.0d																
SE390	DDN Database	05-Jul-11	08-Nov-11	90.0d	PM270	PM310	650.0d																
C.Q.10.10.12.02.02.05	Construction and Fab Support Blog Prelim Design	05-Jul-11	04-Jul-12	261.0d			475.0d																
SE395	Welding Facility Prelim Design	05-Jul-11	04-Jul-12	261.0d	PM270	PM310	475.0d																
SE400	Fabrication Facility Prelim Design	05-Jul-11	04-Jul-12	261.0d	PM270	PM310	475.0d																
C.Q.10.10.12.02.02.06	Heat Transport Development	09-Sep-13	04-Nov-13	40.0d			144.0d																
SE405	Revise/Update Test Plan for Engr. Scale (CTF)	09-Sep-13	04-Nov-13	40.0d	HT9727	HT9760	144.0d																
C.Q.10.10.12.02.03	Technical Discipline Support (Preliminary)	05-Jul-11	25-Apr-14	733.0d			7.0d																
SE410	Structural/Seismic	05-Jul-11	14-Jan-14	660.0d	PM270	PM310	80.0d																
SE415	Piping/Mechanical Systems	05-Jul-11	14-Jan-14	660.0d	PM270	PM310	80.0d																
SE420	HVAC	05-Jul-11	14-Jan-14	660.0d	PM270	PM310	80.0d																
SE425	Electrical	05-Jul-11	14-Jan-14	660.0d	PM270	PM310	80.0d																
SE430	I&C	05-Jul-11	14-Jan-14	660.0d	PM270	PM310	80.0d																
SE435	ASME RPV Code Case Review/Approval	05-Jul-11	22-May-12	230.0d	PM270	NHG730	100.0d																
SE440	ASME High Temp Metals (517, 800H) Code Case Prep.	05-Jul-11	19-Jun-12	250.0d	PM270	MAT0335	90.0d																
SE445	ASME High Temp Metals (517, 800H) Code Case Review/Approval	01-Oct-12	11-Apr-14	400.0d	MAT0335	PM310	17.0d																
SE450	ASME Graphite Baseline (Beginning-of-Life) Code Case Review/Approval	05-Jul-11	22-May-12	230.0d	PM270	NHG730	100.0d																
SE455	ASME Graphite Irradiation/Creep (Remainder-of-Life) Code Case Prep.	25-Jun-12	25-Apr-14	480.0d	MAT1160, MAT1185, MAT1186, MAT1187, MAT1188, MAT1189, MAT1190, MAT1191, MAT1192, MAT1193, MAT1194, MAT1195, MAT1196, MAT1197, MAT1198, MAT1199	PM310	7.0d																
SE460	ASME B&PV Code Consultation	05-Jul-11	14-Jan-14	660.0d	PM270	PM310	80.0d																

█ Remaining Level of Effort
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 ◻ Start Constraint

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9-29-2008

Activity ID	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	2023
C.Q.10.10.12.03	Final Design PE Support	28-Apr-14	20-Feb-17	735.0d			24.0d																
C.Q.10.10.12.03.01	Project Engineering	28-Apr-14	30-Dec-16	700.0d			59.0d																
PE165	Update EPC Work Plan	28-Apr-14	29-Aug-14	90.0d	PM310	PM440	669.0d																
PE170	Final Design Schedule	28-Apr-14	29-Aug-14	90.0d	PM310	PM440	669.0d																
PE175	Update Final Documented Safety Analysis (FSAR)	09-Feb-15	29-Jun-15	100.0d	FL00545, PM310	PM440	454.0d																
PE180	PE Engineering Support to Design	28-Apr-14	30-Dec-16	700.0d	PM310	PM440	59.0d																
PE185	SEA NGNP Design Code Committee	28-Apr-14	02-Jan-15	180.0d	PM310	PM440	579.0d																
C.Q.10.10.12.03.02	Systems Engineering	28-Apr-14	20-Feb-17	735.0d			24.0d																
C.Q.10.10.12.03.02.01	Requirements Development Support Tasks	28-Apr-14	29-Aug-14	90.0d			669.0d																
SE465	Requirements Development Update	28-Apr-14	29-Aug-14	90.0d	PM400	PM440	669.0d																
C.Q.10.10.12.03.02.02	Risk Register and Risk Management Support Tasks	28-Apr-14	29-Aug-14	90.0d			669.0d																
SE470	Risk Management Plan Update	28-Apr-14	29-Aug-14	90.0d	PM400	PM440	669.0d																
C.Q.10.10.12.03.02.03	Technology Road Mapping	28-Apr-14	23-Jan-15	195.0d			564.0d																
SE475	TRL Baseline Update	28-Apr-14	23-Jan-15	195.0d	PM400	PM440	564.0d																
C.Q.10.10.12.03.02.04	Design Data Needs (DDNs) Support Tasks	28-Apr-14	10-Oct-14	120.0d			639.0d																
SE480	Update DDNs	28-Apr-14	18-Jul-14	60.0d	PM400	SE485	639.0d																
SE485	DDN Database	21-Jul-14	10-Oct-14	60.0d	SE480	PM440	639.0d																
C.Q.10.10.12.03.02.05	Heat Transport Development	31-Oct-16	20-Feb-17	80.0d			24.0d																
SE490	Validate TRL 7	31-Oct-16	28-Nov-16	20.0d	HT0900	SE495, PM405	24.0d																
SE495	Revise/Update Test Plan for NGNP Testing	28-Nov-16	20-Feb-17	60.0d	SE490	PM440	24.0d																
C.Q.10.10.12.03.03	Technical Discipline Support (Final)	28-Apr-14	30-Dec-16	700.0d			59.0d																
SE500	Structural/Seismic	28-Apr-14	30-Dec-16	700.0d	PM400	PM440	59.0d																
SE505	Piping/Mechanical Systems	28-Apr-14	30-Dec-16	700.0d	PM400	PM440	59.0d																
SE510	HVAC	28-Apr-14	30-Dec-16	700.0d	PM400	PM440	59.0d																
SE515	Electrical	28-Apr-14	30-Dec-16	700.0d	PM400	PM440	59.0d																
SE520	I&C	28-Apr-14	30-Dec-16	700.0d	PM400	PM440	59.0d																
SE525	ASME Support Through CTF Operation and Final Design to Support Licensing Activities	28-Apr-14	30-Dec-16	700.0d	PM400	PM440	59.0d																
SE530	ASME Graphite Irradiation/Creep (Remainder-of-Life) Code Case Review/Approval	28-Apr-14	30-Dec-16	700.0d	MAT1235, MAT1285, PM400, MAT1120, MAT1385	PM440	59.0d																
SE535	ASME B&PV Code Consultation	28-Apr-14	30-Dec-16	700.0d	PM400	PM440	59.0d																
C.Q.10.10.12.04	Construction PE Support	22-Mar-17	25-Feb-20	765.0d			207.0d																
PE190	Operating Procedures, Manuals & Documentation	22-Mar-17	25-Feb-20	765.0d	PM500	PM520	207.0d																
PE195	Engineering Support to Construction	22-Mar-17	25-Feb-20	765.0d	PM500	PM520	207.0d																
PE200	Vendor Data Review	22-Mar-17	25-Feb-20	765.0d	PM500	PM520	207.0d																
PE205	Verification & Validation Support	22-Mar-17	25-Feb-20	765.0d	PM500	PM520	207.0d																
C.Q.10.10.12.05	Start-Up PE Support	11-Dec-20	24-Jun-21	140.0d			40.0d																
PE210	Operator Training	11-Dec-20	24-Jun-21	140.0d	PM520	PM810	40.0d																
PE215	Operating Procedures, Manuals & Documentation	11-Dec-20	24-Jun-21	140.0d	PM520	PM810	40.0d																
PE220	As-Built Drawings	11-Dec-20	24-Jun-21	140.0d	PM520	PM810	40.0d																
PE225	Verification & Validation support	11-Dec-20	24-Jun-21	140.0d	PM520	PM810	40.0d																
PE230	Maintenance /Logistics Engineering	11-Dec-20	24-Jun-21	140.0d	PM520	PM810	40.0d																
C.Q.10.10.12.06	Operations Engineering	03-Sep-21	21-Dec-23	600.0d			343.0d																
PE235	Maintenance/Logistics Engineering	03-Sep-21	21-Dec-23	600.0d	PM600	PM640	343.0d																
C.Q.10.10.13	Procurement Planning & Overhead	06-Jul-11	22-Oct-13	600.0d			140.0d																
PR100	Acquisition Strategy	06-Jul-11	22-Oct-13	600.0d	PM270	PM310	140.0d																
PR110	Procurement Support	06-Jul-11	22-Oct-13	600.0d	PM270	PM310	140.0d																
C.Q.10.15	Licensing & Regulatory	07-Jul-08	05-Jan-24	4023.0d			332.0d																

■ Remaining Level of Effort
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 ◻ Start Constraint

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NGNP INTEGRATED PLANNING SCHEDULE

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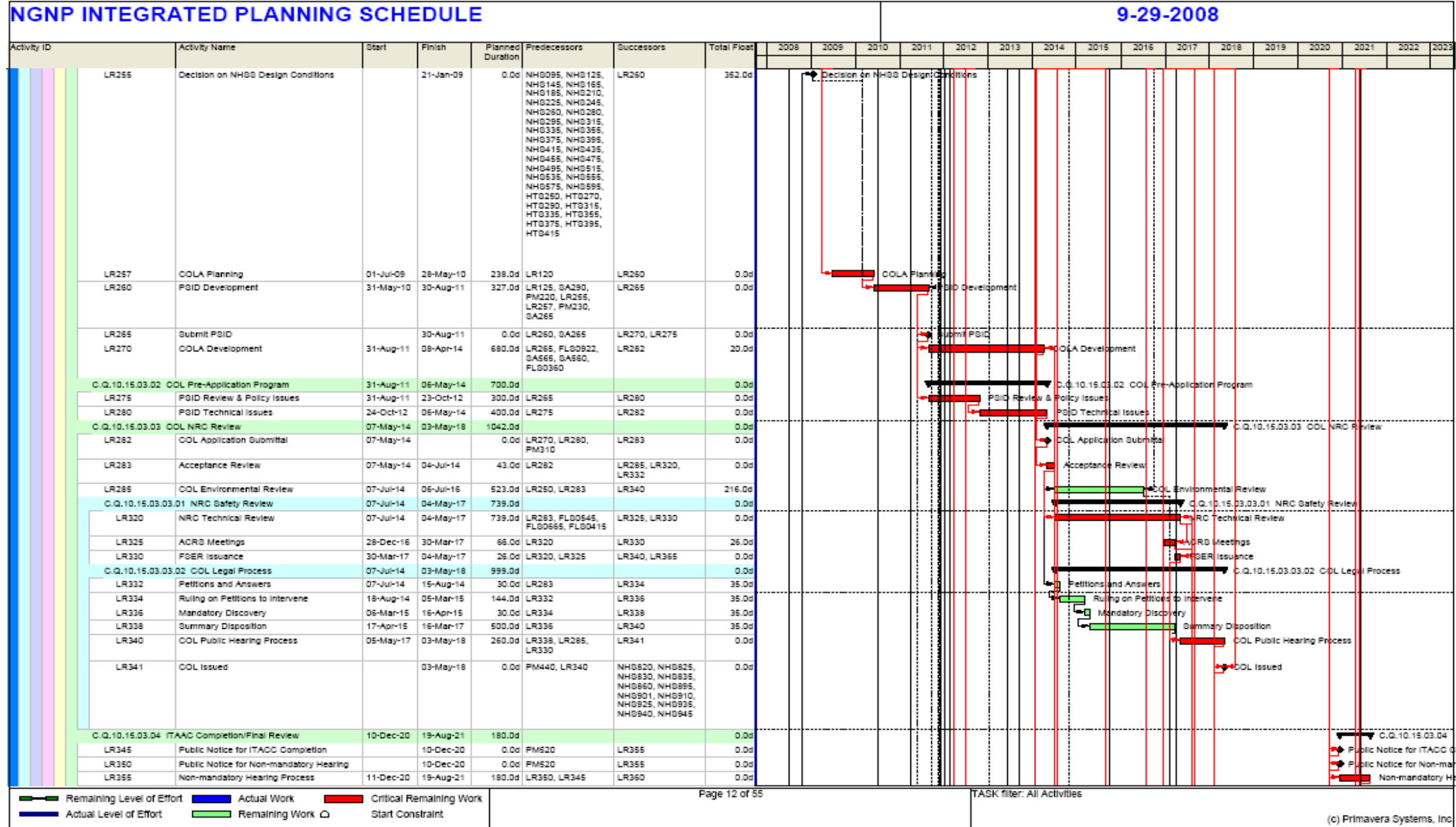
Activity ID	Activity Name	Start	Finish	Planned Duration	Predecessors	Successors	Total Float	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
C.Q.10.15.01 Licensing Project Management								C.Q.10.15.01 Licensing Project Management															
LR100	Issue WEC Licensing Spec. Task	07-Jul-08	15-Jul-09	246.0d		LR110, LR115, LR125, LR145, LR142	0.0d																
LR105	Congressional Licensing Strategy Report Published	15-Aug-08*	21-Aug-08	5.0d		LR110	649.0d																
LR110	Early Pre-application Planning & Discuss...	22-Aug-08	15-Jul-09	234.0d	LR100, LR105	LR130	649.0d																
LR115	Licensing Specification Development	07-Jul-08	30-Apr-09	214.0d	LR100	LR120	0.0d																
LR120	Licensing Plan Development	01-May-09	30-Jun-09	43.0d	LR115	LR145, LR257	0.0d																
LR125	PSID Content Development	07-Jul-08	03-Apr-09	195.0d	LR100	LR260	300.0d																
C.Q.10.15.02 Early Site Permit (ESP)								C.Q.10.15.02 Early Site Permit (ESP)															
C.Q.10.15.02.01 ESP/LWA Pre-Application Program								C.Q.10.15.02.01 ESP/LWA Pre-Application Program															
LR130	Policy Issues	16-Jul-09	15-Jul-10	261.0d	LR110	LR135	649.0d																
LR135	Policy & Technical Issues	16-Jul-10	18-Jul-11	262.0d	LR130	LR165	649.0d																
C.Q.10.15.02.02 ESP/LWA Application Preparation								C.Q.10.15.02.02 ESP/LWA Application Preparation															
LR140	Plant Envelope and Site Selection	14-Apr-10		0.0d	BOP035, PM230	LR150, LR145	282.0d																
LR142	Preliminary ESP Planning	07-Jul-08	30-Jun-09	257.0d	LR100	LR145	488.0d																
LR145	Detailed ESP Planning	15-Apr-10	10-Dec-10	172.0d	LR100, LR140, LR120, LR142	LR150, LR155, LR160	282.0d																
LR150	ESP Application Preparation	13-Dec-10	12-Dec-12	523.0d	LR145, LR140	LR165	282.0d																
LR155	LWA Analysis	13-Dec-10	09-Dec-11	260.0d	LR145	LR160	806.0d																
LR160	LWA Application Preparation	13-Dec-10	13-Dec-11	262.0d	LR155, LR145	LR170	804.0d																
C.Q.10.15.02.03 ESP/LWA NRC Review								C.Q.10.15.02.03 ESP/LWA NRC Review															
C.Q.10.15.02.03.01 Submit & Docket								C.Q.10.15.02.03.01 Submit & Docket															
LR165	ESP Application Submitted	13-Dec-11	12-Dec-12	0.0d	LR150, LR135	LR175	282.0d																
LR170	LWA Application Submitted	13-Dec-11	13-Dec-11	0.0d	LR160	LR210	804.0d																
LR175	Acceptance Review	13-Dec-12	12-Feb-13	44.0d	LR165	LR180, LR205, LR225	282.0d																
C.Q.10.15.02.03.02 Environmental Review & Permits								C.Q.10.15.02.03.02 Environmental Review & Permits															
LR180	Scoping Process	13-Feb-13	15-May-13	66.0d	LR175	LR185	326.0d																
LR185	Staff Review	13-Feb-13	11-Mar-14	280.0d	LR180	LR190	326.0d																
LR190	Receipt and Resolution of Public Comme...	12-Mar-14	07-Jan-15	216.0d	LR185	LR195, LR200	326.0d																
LR195	State and Local Permits	21-Feb-13	07-Jan-15	490.0d	LR190	LR250	606.0d																
LR200	Final EIS Issued	07-Jan-15		0.0d	LR190	LR245	326.0d																
C.Q.10.15.02.03.03 Safety Review								C.Q.10.15.02.03.03 Safety Review															
LR205	Technical Review	13-Feb-13	06-May-14	320.0d	LR175	LR215	349.0d																
LR210	Concurrent LWA Review	14-Dec-11	08-Jan-13	280.0d	LR170	LR215	804.0d																
LR215	Resolution of Open Items and ACRB Rev...	07-May-14	07-Oct-14	110.0d	LR205, LR210	LR220	349.0d																
LR220	FSER Issuance	08-Oct-14	05-Dec-14	43.0d	LR215	LR245	349.0d																
C.Q.10.15.02.03.04 Preliminary Legal Proceedings								C.Q.10.15.02.03.04 Preliminary Legal Proceedings															
LR225	Petitions and Answers	13-Feb-13	11-Jun-13	95.0d	LR175	LR230	282.0d																
LR230	Ruling on Petitions to Intervene	12-Jun-13	14-Oct-13	89.0d	LR225	LR235	282.0d																
LR235	Mandatory Discovery	15-Oct-13	25-Nov-13	30.0d	LR230	LR240	282.0d																
LR240	Summary Disposition	25-Nov-13	10-Mar-14	336.0d	LR235	LR245	282.0d																
C.Q.10.15.02.03.05 Public Hearing								C.Q.10.15.02.03.05 Public Hearing															
LR245	Public Hearing Process	11-Mar-15	05-Apr-16	280.0d	LR200, LR220, LR240	LR250	282.0d																
LR250	ESP/LWA Issued		05-Apr-16	0.0d	LR245, LR195	LR265	282.0d																
C.Q.10.15.03 Combined License (COL)								C.Q.10.15.03 Combined License (COL)															
C.Q.10.15.03.01 COL Application Preparation								C.Q.10.15.03.01 COL Application Preparation															
		21-Jan-09	19-Aug-21	3281.0d			0.0d																
		21-Jan-09	08-Apr-14	1369.0d			20.0d																

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LR360	Approval to Load Fuel		19-Aug-21	0.0d	LR355	PM810, FL30940	0.0d																
C.Q.10.16.04 Commercial Design Certification		05-May-17	05-Jan-24	1741.0d			332.0d																
LR365	Commercial DCD Development	05-May-17	20-Sep-18	360.0d	MAT1260, MAT1285, LR330	LR370	813.0d																
LR370	Submit Commercial Design Document	21-Sep-18		0.0d	LR365	LR375	813.0d																
LR375	NRC Acceptance Review	21-Sep-18	13-Dec-18	60.0d	LR370	LR380	813.0d																
LR380	NRC Technical Review	19-Oct-20	19-Aug-22	480.0d	LR375, FL00940	LR385	332.0d																
LR385	DC Hearing Process	22-Aug-22	21-Jul-23	240.0d	LR380	LR390	332.0d																
LR390	DC Rule Making	24-Jul-23	05-Jan-24	120.0d	LR385	LR400	332.0d																
LR400	Commercial Design Certified	05-Jan-24		0.0d	LR390		332.0d																
C.Q.10.20 Conceptual Design		01-Oct-08	04-Jul-11	704.0d			3596.0d																
C.Q.10.20.14 Safety Analysis Documents		02-Oct-08	13-Aug-10	472.0d			3827.0d																
SA260	Preliminary Integrated Safety Assessment	02-Oct-08	25-Nov-09	300.0d	PM150, SA280, SA305, SA315	SA265	339.0d																
SA265	Support Preliminary Safety Information Document	01-Mar-10	13-Aug-10	120.0d	SA260, SA290, SA330, SA440, SA515	LR260, LR265	272.0d																
SA280	Preliminary Criticality Safety Assessments	02-Oct-08	18-Mar-09	120.0d	PM150	SA290, SA285, SA260	519.0d																
SA285	Criticality Safety Analysis Work Plan	02-Oct-08	18-Mar-09	120.0d	SA280	SA290	519.0d																
SA290	Draft Criticality Safety Analysis Report	19-Mar-09	02-Sep-09	120.0d	SA280, SA285	LR260, SA265	519.0d																
C.Q.10.20.14.01 Heat Transport Failures & Thermal Events		05-Jan-09	13-Aug-10	420.0d			272.0d																
SA295	Select Relevant Software	05-Jan-09*	27-Mar-09	60.0d		SA305, SA300	272.0d																
SA300	Define VHTR Operating/Accident Limits (draft)	05-Jan-09	19-Jun-09	120.0d	SA295	SA305, SA315	272.0d																
SA305	Develop SW Model(s) Based On Equip List	22-Jun-09	06-Nov-09	100.0d	SA295, SA300, SA480	SA310, SA260	272.0d																
SA310	Validate Software Model	09-Nov-09	04-Dec-09	20.0d	SA305	SA320	272.0d																
SA315	Define Equip Failures & Accident Scenarios (H2 Plant)	30-Mar-09	11-Sep-09	120.0d	SA300, SA350	SA320, SA260	332.0d																
SA320	Model SS Operations and Evolutions	07-Dec-09	26-Feb-10	60.0d	SA310, SA315	SA325	272.0d																
SA325	Model H2 and VHTR Plant Transients	01-Mar-10	21-May-10	60.0d	SA320	SA330	272.0d																
SA330	Model Failures/Scenarios	24-May-10	13-Aug-10	60.0d	SA325	SA680, SA685, SA265	272.0d																
C.Q.10.20.14.02 Probabilistic Risk Assessment		02-Oct-08	15-Apr-10	386.0d			3913.0d																
C.Q.10.20.14.02.01 Internal Events PRA Model		03-Nov-08	26-Aug-09	201.0d			4079.0d																
SA335	Review DPP PRA Models	03-Nov-08*	19-Dec-08	35.0d		SA340	332.0d																
SA340	Definition of Modes and States	22-Dec-08	02-Jan-09	10.0d	SA335, SA480	SA345	332.0d																
SA345	Initiating Events Analysis	05-Jan-09	13-Feb-09	30.0d	SA340	SA350, SA415	332.0d																
SA350	Accident Sequence Analysis	16-Feb-09	27-Mar-09	30.0d	SA345	SA365, SA380, SA385, SA390, SA395, SA420, SA400, SA315	332.0d																
SA355	Systems Analysis	04-Dec-08	03-Jun-09	130.0d	SA480	SA365	414.0d																
SA360	Data Analysis	04-Dec-08	14-Jan-09	30.0d	SA480		4239.0d																
SA365	Human Reliability Analysis	04-Jun-09	15-Jul-09	30.0d	SA350, SA355	SA370	414.0d																
SA370	Preliminary Internal Events PRA Model	16-Jul-09	26-Aug-09	30.0d	SA365, SA485, SA420	SA405, SA445, SA570	414.0d																
C.Q.10.20.14.02.02 External Events PRA Model		30-Mar-09	19-Nov-09	169.0d			383.0d																
SA380	Internal Flooding Analysis	30-Mar-09	31-Jul-09	90.0d	SA350, SA480	SA405	437.0d																
SA385	Internal Fire Analysis	30-Mar-09	31-Jul-09	90.0d	SA350, SA480	SA405	437.0d																
SA390	Seismic Risk Analysis	30-Mar-09	15-Oct-09	144.0d	SA350, SA480	SA405, SA425	358.0d																
SA395	Hydrogen Hazards Analysis	30-Mar-09	15-Oct-09	144.0d	SA350, SA480	SA405	383.0d																
SA400	Other External Hazards Analysis	30-Mar-09	19-Jun-09	60.0d	SA480, SA350	SA405	467.0d																

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SA405	Preliminary External Events Analysis	16-Oct-09	19-Nov-09	25.0d	SA370, SA380, SA385, SA390, SA395, SA400, SA485	SA450	383.0d																
C.Q.10.20.14.02.03	Event Consequence Analysis	16-Feb-09	15-Apr-10	304.0d			358.0d																
SA415	Thermal and Fluid Flow Analysis - Scope of Analysis Cases	16-Feb-09	27-Feb-09	10.0d	SA345	SA420	482.0d																
SA420	Thermal and Fluid Flow Analysis - Complete Cases for Sequence Development	30-Mar-09	08-May-09	30.0d	SA350, SA415	SA370, SA425	462.0d																
SA425	Thermal and Fluid Flow Analysis - Complete Cases For Source Term Development	16-Oct-09	19-Nov-09	25.0d	SA390, SA420	SA430	358.0d																
SA430	Source Term Analysis	20-Nov-09	28-Jan-10	50.0d	SA425	SA435, SA440	358.0d																
SA435	Radiological Dose Analysis	29-Jan-10	04-Mar-10	25.0d	SA430	SA440	358.0d																
SA440	Chapter 15 Safety Analysis	05-Mar-10	15-Apr-10	30.0d	SA430, SA435	SA265, SA578	358.0d																
C.Q.10.20.14.02.04	Risk Analysis	27-Aug-09	17-Dec-09	81.0d			383.0d																
SA445	Event Sequence Preliminary Internal Events Quantification	27-Aug-09	23-Sep-09	20.0d	SA370	SA495, SA500	414.0d																
SA450	Event Sequence Preliminary External Events Quantification	20-Nov-09	17-Dec-09	20.0d	SA405	SA500	383.0d																
C.Q.10.20.14.02.05	Design and Licensing Support & Interf...	02-Oct-08	11-Mar-10	361.0d			383.0d																
SA480	Initial Design And Site Assumptions for PRA	02-Oct-08	03-Dec-08	45.0d	PM150	SA355, SA360, SA380, SA385, SA390, SA395, SA400, SA340, SA485, SA305, SA490	344.0d																
SA485	Preliminary Design and Site input to PRA	04-Dec-08	01-Jul-09	150.0d	SA480, BOP015, NHB100, NHB150, NHB170, NHB285, NHB285, NHB300, NHB320, NHB340, NHB350, NHB400, NHB420, NHB440, NHB460, NHB520, NHB540, NHB600, HTG255, HTG275, HTG295	SA370, SA405, SA605	424.0d																
SA490	Initial LBE's for Conceptual Design	04-Dec-08	14-Jan-09	30.0d	SA480	SA510	644.0d																
SA495	LBE Update based on partial PRA Results	24-Sep-09	04-Nov-09	30.0d	SA445	SA500	414.0d																
SA500	Preliminary PRA based LBE's	18-Dec-09	28-Jan-10	30.0d	SA445, SA450, SA495	SA515	383.0d																
SA510	Initial Input to Safety Classes	15-Jan-09	28-Jan-09	10.0d	SA490	SA515	644.0d																
SA515	Preliminary PRA Based Safety Classes	29-Jan-10	11-Mar-10	30.0d	SA500, SA510	SA265	383.0d																
C.Q.10.20.20	Nuclear Heat Supply System (NHSS)	02-Oct-08	04-Aug-10	465.0d			1131.0d																
C.Q.10.20.20.01	NHSS Conceptual Design Report	02-Oct-08	04-Aug-10	465.0d			1131.0d																
NHB050	Conceptual Design Report Preparation	01-Oct-09	20-Jan-10	80.0d	NHB115, NHB140, NHB160, NHB180, NHB200, NHB220, NHB240, NHB258, NHB275, NHB292, NHB310, NHB330, NHB350, NHB370, NHB390, NHB410, NHB430, NHB450, NHB470, NHB490, NHB510, NHB530, NHB550, NHB570, NHB590, NHB610	NHB070, NHB065	279.0d																
NHB065	Conceptual Cost Estimate	06-Aug-09	20-Jan-10	120.0d	NHB050	NHB070	279.0d																

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Activity ID	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	2023
NHG070	Conceptual Design Review	21-Jan-10	17-Mar-10	40.0d	NHG050, NHG065	NHG075	279.0d																
NHG075	Independent Review	18-Mar-10	12-May-10	40.0d	NHG070	NHG080	279.0d																
NHG080	Incorporate Review Comments	13-May-10	07-Jul-10	40.0d	NHG075	NHG085	279.0d																
NHG085	Issue NHB3 Conceptual Design Report	07-Jul-10	00-Jul-10	0.0d	NHG080	NHG090	279.0d																
NHG090	NHB3 Conceptual Design Complete	04-Aug-10	00-Jul-10	0.0d	NHG085	PM220	279.0d																
C.Q.10.20.20.01.01	Reactor Unit System	02-Oct-08	30-Sep-09	245.0d			1351.0d																
C.Q.10.20.20.01.01.01	Reactor Pressure Vessel	02-Oct-08	30-Sep-09	245.0d			1351.0d																
NHG095	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	SE305, SE295, PM150	NHG100, LR255	279.0d																
NHG100	Conceptual Studies/Analysis	22-Jan-09	10-Jun-09	100.0d	NHG095	NHG110, SA485	279.0d																
NHG110	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG100	NHG115	279.0d																
NHG115	Conceptual System Design Descriptions (SDDs)/Specs	11-Jun-09	30-Sep-09	80.0d	NHG110	NHG120, NHG050	279.0d																
NHG120	Draft Procurement Specification	11-Jun-09	30-Sep-09	80.0d	NHG115	NHG121	1351.0d																
NHG121	Submit Proc.Spec to RPV Fabricator	30-Sep-09	00-Sep-09	0.0d	NHG120	NHG005	1351.0d																
C.Q.10.20.20.01.02	Core Internal Structure (Graphite)	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG125	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	SE315, PM150	NHG130, LR255	279.0d																
NHG130	Conceptual Studies/Analysis	22-Jan-09	10-Jun-09	100.0d	NHG125	NHG135	279.0d																
NHG135	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG130	NHG140	279.0d																
NHG140	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG135	NHG050	279.0d																
C.Q.10.20.20.01.03	Reactivity Control System (Reflector)	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG145	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG150, LR255	279.0d																
NHG150	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG145	NHG155, SA485	279.0d																
NHG155	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG150	NHG150	279.0d																
NHG160	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG155	NHG050	279.0d																
C.Q.10.20.20.01.04	Neutron Source System (Fuel)	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG165	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG170, LR255	279.0d																
NHG170	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG165	NHG175, SA485	279.0d																
NHG175	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG170	NHG180	279.0d																
NHG180	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG175	NHG050	279.0d																
C.Q.10.20.20.01.02	Core Conditioning System	02-Oct-08	30-Sep-09	245.0d			279.0d																
C.Q.10.20.20.01.02.01	OCB Blower	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG185	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG190, LR255	279.0d																
NHG190	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG185	NHG195	279.0d																
NHG195	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG190	NHG200	279.0d																
NHG200	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG195	NHG050	279.0d																
C.Q.10.20.20.01.02.02	OCB Heat Exchanger	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG210	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG212, LR255	279.0d																
NHG212	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG210	NHG215	279.0d																
NHG215	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG212	NHG220	279.0d																
NHG220	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG215	NHG050	279.0d																
C.Q.10.20.20.01.02.03	OCB Valves	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG225	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG230, LR255	279.0d																
NHG230	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG225	NHG235	279.0d																
NHG235	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG230	NHG240	279.0d																
NHG240	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG235	NHG050	279.0d																
C.Q.10.20.20.01.02.04	OCB Piping	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG245	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG250, LR255	279.0d																
NHG250	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG245	NHG255	279.0d																
NHG255	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG250	NHG260	279.0d																
NHG260	Conceptual SDDs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG255	NHG050	279.0d																

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Activity ID	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	2023
C.Q.10.20.20.01.03	Reactor Cavity Cooling System	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG260	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG265, LR255	279.0d																
NHG265	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG260	NHG270, SA485	279.0d																
NHG270	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG265	NHG275	279.0d																
NHG275	Conceptual 3DOs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG270	NHG050	279.0d																
C.Q.10.20.20.01.04	Fuel Handling and Storage System	02-Oct-08	30-Sep-09	245.0d			279.0d																
C.Q.10.20.20.01.04.01	Fuel Loading Subsystem	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG280	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG285, LR255	279.0d																
NHG285	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG280	NHG290, SA485	279.0d																
NHG290	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG285	NHG292	279.0d																
NHG292	Conceptual 3DOs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG290	NHG050	279.0d																
C.Q.10.20.20.01.04.02	High-level Waste Handling Sub...	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG295	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG300, LR255	279.0d																
NHG300	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG295	NHG305, SA485	279.0d																
NHG305	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG300	NHG310	279.0d																
NHG310	Conceptual 3DOs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG305	NHG050	279.0d																
C.Q.10.20.20.01.05	Helium Service System	02-Oct-08	30-Sep-09	245.0d			279.0d																
C.Q.10.20.20.01.05.01	PHTS Inventory Control System	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG315	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	SE300, PM150	NHG320, LR255	279.0d																
NHG320	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG315	NHG325, SA485	279.0d																
NHG325	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG320	NHG330	279.0d																
NHG330	Conceptual 3DOs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG325	NHG050	279.0d																
C.Q.10.20.20.01.05.02	SHTS Inventory Control System	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG335	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG340, LR255	279.0d																
NHG340	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG335	NHG345, SA485	279.0d																
NHG345	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG340	NHG350	279.0d																
NHG350	Conceptual 3DOs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG345	NHG050	279.0d																
C.Q.10.20.20.01.05.03	PHTS Helium Purification System	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG355	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG360, LR255	279.0d																
NHG360	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG355	NHG365, SA485	279.0d																
NHG365	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG360	NHG370	279.0d																
NHG370	Conceptual 3DOs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG365	NHG050	279.0d																
C.Q.10.20.20.01.05.04	SHTS Helium Purification System	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG375	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG380, LR255	279.0d																
NHG380	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG375	NHG385	279.0d																
NHG385	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG380	NHG390	279.0d																
NHG390	Conceptual 3DOs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG385	NHG050	279.0d																
C.Q.10.20.20.01.06	Control and Instrumentation System	02-Oct-08	30-Sep-09	245.0d			279.0d																
C.Q.10.20.20.01.06.01	Operational Control System	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG395	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG400, LR255	279.0d																
NHG400	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG395	NHG405, SA485	279.0d																
NHG405	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG400	NHG410	279.0d																
NHG410	Conceptual 3DOs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG405	NHG050	279.0d																
C.Q.10.20.20.01.06.02	Reactor Protection System	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG415	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG420, LR255	279.0d																
NHG420	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG415	NHG425, SA485	279.0d																
NHG425	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG420	NHG430	279.0d																
NHG430	Conceptual 3DOs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG425	NHG050	279.0d																
C.Q.10.20.20.01.06.03	Equipment Protection System	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG435	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG440, LR255	279.0d																
NHG440	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG435	NHG445, SA485	279.0d																

■ Remaining Level of Effort
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NHG445	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG440	NHG450	279.0d																
NHG450	Conceptual SDOs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG445	NHG505	279.0d																
C.Q.10.20.20.01.05.04	Post-event Monitoring and Reco...	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG455	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG460, LR255	279.0d																
NHG460	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG455	NHG465, SA485	279.0d																
NHG465	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG460	NHG470	279.0d																
NHG470	Conceptual SDOs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG465	NHG505	279.0d																
C.Q.10.20.20.01.05.05	Uninterruptible Power Supply	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG475	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG480, LR255	279.0d																
NHG480	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG475	NHG485	279.0d																
NHG485	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG480	NHG490	279.0d																
NHG490	Conceptual SDOs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG485	NHG505	279.0d																
C.Q.10.20.20.01.05.06	1E Batteries	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG495	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG500, LR255	279.0d																
NHG500	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG495	NHG505	279.0d																
NHG505	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG500	NHG510	279.0d																
NHG510	Conceptual SDOs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG505	NHG505	279.0d																
C.Q.10.20.20.01.07	Cooling Water System	02-Oct-08	30-Sep-09	245.0d			279.0d																
C.Q.10.20.20.01.07.01	Auxiliary Component Cooling W...	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG515	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG520, LR255	279.0d																
NHG520	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG515	NHG525, SA485	279.0d																
NHG525	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG520	NHG530	279.0d																
NHG530	Conceptual SDOs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG525	NHG505	279.0d																
C.Q.10.20.20.01.07.02	Equipment Protection Cooling CI...	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG535	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG540, LR255	279.0d																
NHG540	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG535	NHG545, SA485	279.0d																
NHG545	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG540	NHG550	279.0d																
NHG550	Conceptual SDOs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG545	NHG505	279.0d																
C.Q.10.20.20.01.08	Electrical Distribution System	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG555	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG560, LR255	279.0d																
NHG560	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG555	NHG565	279.0d																
NHG565	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG560	NHG570	279.0d																
NHG570	Conceptual SDOs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG565	NHG505	279.0d																
C.Q.10.20.20.01.09	Reactor Building HVAC System	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG575	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG580, LR255	279.0d																
NHG580	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG575	NHG585	279.0d																
NHG585	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG580	NHG590	279.0d																
NHG590	Conceptual SDOs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG585	NHG505	279.0d																
C.Q.10.20.20.01.10	Primary Loop Initial Cleanup System	02-Oct-08	30-Sep-09	245.0d			279.0d																
NHG595	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	NHG600, LR255	279.0d																
NHG600	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	NHG595	NHG605, SA485	279.0d																
NHG605	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	NHG600	NHG610	279.0d																
NHG610	Conceptual SDOs/Specs	11-Jun-09	30-Sep-09	80.0d	NHG605	NHG505	279.0d																
C.Q.10.20.30	Heat Transport System (HTS)	02-Oct-08	04-Aug-10	465.0d			1131.0d																
C.Q.10.20.30.04	HTS Conceptual Design Report	02-Oct-08	04-Aug-10	465.0d			1131.0d																
HTG215	Conceptual Design Report Preparation	01-Oct-09	20-Jan-10	80.0d	HTG265, HTG285, HTG305, HTG330, HTG350, HTG370, HTG390, HTG410, HTG430, HTG310	HTG225, HTG220	279.0d																
HTG220	Conceptual Cost Estimate	06-Aug-09	20-Jan-10	120.0d	HTG215	HTG225	279.0d																
HTG225	Conceptual Design Review	21-Jan-10	17-Mar-10	40.0d	HTG215, HTG220	HTG230	279.0d																

■ Remaining Level of Effort
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 □ Start Constraint

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Activity ID	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	2023	
HTG230	Independent Review	18-Mar-10	12-May-10	40.0d	HTG235	HTG235	279.0d																	
HTG235	Incorporate Review Comments	13-May-10	07-Jul-10	40.0d	HTG230	HTG240	279.0d																	
HTG240	Issue HTS Conceptual Design Report		07-Jul-10	0.0d	HTG235	HTG245	279.0d																	
HTG245	HTS Conceptual Design Complete		04-Aug-10	0.0d	HTG240	PM220	279.0d																	
C.Q.10.20.30.04.01	Primary Heat Transport System	02-Oct-08	30-Sep-09	245.0d			1351.0d																	
C.Q.10.20.30.04.01.01	PHTS Circulator	02-Oct-08	30-Sep-09	245.0d			279.0d																	
HTG250	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	HTG255, LR255	279.0d																	
HTG255	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	HTG250	HTG260, SA485	279.0d																	
HTG260	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	HTG255	HTG265	279.0d																	
HTG265	Conceptual 3D/Specs	11-Jun-09	30-Sep-09	80.0d	HTG260	HTG215	279.0d																	
C.Q.10.20.30.04.01.02	PHTS Valves	02-Oct-08	30-Sep-09	245.0d			279.0d																	
HTG270	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	HTG275, LR255	279.0d																	
HTG275	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	HTG270	HTG280, SA485	279.0d																	
HTG280	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	HTG275	HTG285	279.0d																	
HTG285	Conceptual 3D/Specs	11-Jun-09	30-Sep-09	80.0d	HTG280	HTG215	279.0d																	
C.Q.10.20.30.04.01.03	Intermediate Heat Exchanger	02-Oct-08	30-Sep-09	245.0d			1351.0d																	
HTG290	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	HTG295, LR255	279.0d																	
HTG295	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	HTG290	HTG300, SA485	279.0d																	
HTG300	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	HTG295	HTG305	279.0d																	
HTG305	Conceptual 3D/Specs	11-Jun-09	30-Sep-09	80.0d	HTG300	HTG215, HTG310	279.0d																	
HTG310	Draft Procurement Specification	11-Jun-09	30-Sep-09	80.0d	HTG305	HTG311	279.0d																	
HTG311	Issue Procurement Spec to IHX Fabricator		30-Sep-09	0.0d	HTG310	HTG560	1351.0d																	
C.Q.10.20.30.04.01.04	PHTS Piping	02-Oct-08	30-Sep-09	245.0d			279.0d																	
HTG315	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	HTG320, LR255	279.0d																	
HTG320	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	HTG315	HTG325	279.0d																	
HTG325	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	HTG320	HTG330	279.0d																	
HTG330	Conceptual 3D/Specs	11-Jun-09	30-Sep-09	80.0d	HTG325	HTG215	279.0d																	
C.Q.10.20.30.04.01.05	Pressure Relief System	02-Oct-08	30-Sep-09	245.0d			279.0d																	
HTG335	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	HTG340, LR255	279.0d																	
HTG340	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	HTG335	HTG345	279.0d																	
HTG345	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	HTG340	HTG350	279.0d																	
HTG350	Conceptual 3D/Specs	11-Jun-09	30-Sep-09	80.0d	HTG345	HTG215	279.0d																	
C.Q.10.20.30.04.02	Secondary Heat Transport System	02-Oct-08	30-Sep-09	245.0d			279.0d																	
C.Q.10.20.30.04.02.01	SHTS Circulator	02-Oct-08	30-Sep-09	245.0d			279.0d																	
HTG355	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	HTG360, LR255	279.0d																	
HTG360	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	HTG355	HTG365	279.0d																	
HTG365	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	HTG360	HTG370	279.0d																	
HTG370	Conceptual 3D/Specs	11-Jun-09	30-Sep-09	80.0d	HTG365	HTG215	279.0d																	
C.Q.10.20.30.04.02.02	Helium Isolation Valves	02-Oct-08	30-Sep-09	245.0d			279.0d																	
HTG375	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	HTG380, LR255	279.0d																	
HTG380	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	HTG375	HTG385	279.0d																	
HTG385	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	HTG380	HTG390	279.0d																	
HTG390	Conceptual 3D/Specs	11-Jun-09	30-Sep-09	80.0d	HTG385	HTG215	279.0d																	
C.Q.10.20.30.04.02.03	SHTS Piping	02-Oct-08	30-Sep-09	245.0d			279.0d																	
HTG395	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	HTG400, LR255	279.0d																	
HTG400	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	HTG395	HTG405	279.0d																	
HTG405	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	HTG400	HTG410	279.0d																	
HTG410	Conceptual 3D/Specs	11-Jun-09	30-Sep-09	80.0d	HTG405	HTG215	279.0d																	
C.Q.10.20.30.04.02.04	SHTS Flow Coupling & Mixer	02-Oct-08	30-Sep-09	245.0d			279.0d																	
HTG415	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	HTG420, LR255	279.0d																	
HTG420	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	HTG415	HTG425	279.0d																	

█ Remaining Level of Effort
 █ Actual Work
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█ Actual Level of Effort
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 ◻ Start Constraint

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HT9425	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	HT9420	HT9430	279.0d																	
HT9430	Conceptual 3DDs/Specs	11-Jun-09	30-Sep-09	80.0d	HT9425	HT9215	279.0d																	
C.Q.10.20.40 Hydrogen Production System (HPS)																								
HP9010	NHI Interface	05-Jan-09*	04-Dec-09	240.0d		PM220	452.0d																	
C.Q.10.20.40.01 Systems Engineering Down Select/Decision Tree																								
C.Q.10.20.40.01.01 Analyze Cost Comparisons																								
HP9100	Finish Economic Comparisons (WEC)	05-Jan-09*	05-Jan-09*	0.0d		HP9105, HP9110	291.0d																	
HP9105	Complete TRU/DRL Assignments	05-Jan-09	30-Mar-09	60.0d	HP9100	HP9110	291.0d																	
HP9110	Determine Costs to Complete TDRM Act...	05-Jan-09	30-Mar-09	60.0d	HP9100, HP9105	HP9115	291.0d																	
HP9115	Develop Life Cycle costs	31-Mar-09	22-Jun-09	60.0d	HP9110	HP9165	291.0d																	
C.Q.10.20.40.01.02 Compare Process Efficiencies																								
HP9120	Define Efficiency Calculation & Parameters	26-Nov-08	23-Dec-08	20.0d	HP9135	HP9125	42.0d																	
HP9125	Perform Efficiency Calculations	24-Dec-08	20-Jan-09	20.0d	HP9120	HP9130	42.0d																	
HP9130	Compare Process Efficiencies	21-Jan-09	17-Feb-09	20.0d	HP9125	HP9230	42.0d																	
C.Q.10.20.40.01.03 Compare Process Robustness																								
HP9135	Develop 3 Reference Flow sheets	01-Oct-08*	26-Nov-08	40.0d		HP9120, HP9140, HP9145	22.0d																	
HP9140	Develop Equipment Lists(3) and Process Lay-outs	26-Nov-08	17-Feb-09	60.0d	HP9135	HP9165	380.0d																	
HP9145	Perform RAMI Study	26-Nov-08	17-Mar-09	80.0d	HP9135	HP9165, HP9225	22.0d																	
C.Q.10.20.40.01.04 H2 Process Selection																								
HP9150	Develop Review Team	05-Jan-09*	27-Feb-09	40.0d		HP9155	332.0d																	
HP9155	Review Decision Tree Data	02-Mar-09	27-Mar-09	20.0d	HP9150	HP9160	332.0d																	
HP9160	Develop Weighting Criteria	30-Mar-09	24-Apr-09	20.0d	HP9155	HP9165	332.0d																	
HP9165	Conduct Formal Review Workshop	23-Jun-09	20-Jul-09	20.0d	HP9160, HP9145, HP9115, HP9140	HP9170	291.0d																	
HP9170	Develop Decision Tree Report	21-Jul-09	17-Aug-09	20.0d	HP9165	HP9175	291.0d																	
HP9175	Issue H2 Process Recommendation	17-Aug-09	17-Aug-09	0.0d	HP9170	HP9180	291.0d																	
HP9180	H2 Process Selection	14-Sep-09	14-Sep-09	0.0d	HP9175	HP9235	291.0d																	
C.Q.10.20.40.01.05 Validate TRL 5 for HT9E																								
HP9205	Update Flow sheet	01-Oct-08*	23-Dec-08	60.0d		HP9210, HP9215, HP9220	22.0d																	
HP9210	Update H2A Analysis	24-Dec-08	17-Feb-09	40.0d	HP9205	HP9225	42.0d																	
HP9215	Validate Cell Durability ((1000 hrs)	01-Oct-08	23-Dec-08	60.0d	HP9205	HP9225	82.0d																	
HP9220	Validate Steam Generator Perf. (2500 hrs)	01-Oct-08	17-Mar-09	120.0d	HP9205	HP9225	22.0d																	
HP9225	TRL 5 Validated	14-Apr-09	14-Apr-09	0.0d	HP9220, HP9215, HP9580, HP9210, HP9145	HP9230	2.0d																	
HP9230	HPS TRL 5 Achieved	14-Apr-09	14-Apr-09	0.0d	HP9225, HP9130	HP9595, HP9585	2.0d																	
C.Q.10.20.40.02 HPS Conceptual Design Report																								
HP9235	Conceptual Design Report Preparation	31-Aug-10	20-Dec-10	80.0d	HP9315, HP9335, HP9355, HP9375, HP9395, HP9180	HP9245, HP9240	41.0d																	
HP9240	Conceptual Cost Estimate	06-Jul-10	20-Dec-10	120.0d		HP9235	41.0d																	
HP9245	Conceptual Design Review	21-Dec-10	14-Feb-11	40.0d	HP9235, HP9240	HP9250	41.0d																	
HP9250	Independent Review	15-Feb-11	11-Apr-11	40.0d	HP9245	HP9255	41.0d																	
HP9255	Incorporate Review Comments	12-Apr-11	06-Jun-11	40.0d	HP9250	HP9260	41.0d																	
HP9260	Issue HPS Conceptual Design Report	06-Jun-11	06-Jun-11	0.0d	HP9255	HP9265	41.0d																	
HP9265	HPS Conceptual Design Complete	04-Jul-11	04-Jul-11	0.0d	HP9260	PM375, PM220	41.0d																	
C.Q.10.20.40.02.01 Feed and Utility System Supply																								
HP9300	Conceptual T&FRs	01-Sep-09*	21-Dec-09	80.0d		HP9305	41.0d																	
HP9305	Conceptual Studies Analysis	22-Dec-09	10-May-10	100.0d	HP9300	HP9310	41.0d																	
HP9310	Conceptual Drawings/Models	11-May-10	30-Aug-10	80.0d	HP9305	HP9315	41.0d																	

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HP0315	Conceptual SDOs/Specs	11-May-10	30-Aug-10	80.0d	HP0310	HP0235	41.0d																
C.Q.10.20.40.02.02	Hydrogen Production Subsystem	01-Sep-09	30-Aug-10	260.0d			41.0d																
HP0320	Conceptual T&FRs	01-Sep-09*	21-Dec-09	80.0d		HP0325	41.0d																
HP0325	Conceptual Studies Analysis	22-Dec-09	10-May-10	100.0d	HP0320	HP0330	41.0d																
HP0330	Conceptual Drawings/Models	11-May-10	30-Aug-10	80.0d	HP0325	HP0335	41.0d																
HP0335	Conceptual SDOs/Specs	11-May-10	30-Aug-10	80.0d	HP0330	HP0235	41.0d																
C.Q.10.20.40.02.03	Product Purification System	01-Sep-09	30-Aug-10	260.0d			41.0d																
HP0340	Conceptual T&FRs	01-Sep-09*	21-Dec-09	80.0d		HP0345	41.0d																
HP0345	Conceptual Studies Analysis	22-Dec-09	10-May-10	100.0d	HP0340	HP0350	41.0d																
HP0350	Conceptual Drawings/Models	11-May-10	30-Aug-10	80.0d	HP0345	HP0355	41.0d																
HP0355	Conceptual SDOs/Specs	11-May-10	30-Aug-10	80.0d	HP0350	HP0235	41.0d																
C.Q.10.20.40.02.04	Waste Treatment and Disposal System	01-Sep-09	30-Aug-10	260.0d			41.0d																
HP0360	Conceptual T&FRs	01-Sep-09*	21-Dec-09	80.0d		HP0365	41.0d																
HP0365	Conceptual Studies Analysis	22-Dec-09	10-May-10	100.0d	HP0360	HP0370	41.0d																
HP0370	Conceptual Drawings/Models	11-May-10	30-Aug-10	80.0d	HP0365	HP0375	41.0d																
HP0375	Conceptual SDOs/Specs	11-May-10	30-Aug-10	80.0d	HP0370	HP0235	41.0d																
C.Q.10.20.40.02.05	HPS Instrumentation and Control Syst...	01-Sep-09	30-Aug-10	260.0d			41.0d																
HP0380	Conceptual T&FRs	01-Sep-09*	21-Dec-09	80.0d		HP0385	41.0d																
HP0385	Conceptual Studies Analysis	22-Dec-09	10-May-10	100.0d	HP0380	HP0390	41.0d																
HP0390	Conceptual Drawings/Models	11-May-10	30-Aug-10	80.0d	HP0385	HP0395	41.0d																
HP0395	Conceptual SDOs/Specs	11-May-10	30-Aug-10	80.0d	HP0390	HP0235	41.0d																
C.Q.10.20.50	Power Conversion System (PCS)	02-Oct-08	04-Aug-10	465.0d			279.0d																
C.Q.10.20.50.01	PCS Conceptual Design Report	02-Oct-08	04-Aug-10	465.0d			279.0d																
PC0070	Conceptual Design Report Preparation	01-Oct-09	20-Jan-10	80.0d	PC0120, PC0140, PC0160, PC0180, PC0200, PC0220	PC0080, PC0075	279.0d																
PC0075	Conceptual Cost Estimate	06-Aug-09	20-Jan-10	120.0d	PC0070	PC0080	279.0d																
PC0080	Conceptual Design Review	21-Jan-10	17-Mar-10	40.0d	PC0070, PC0075	PC0085	279.0d																
PC0085	Independent Review	18-Mar-10	12-May-10	40.0d	PC0080	PC0090	279.0d																
PC0090	Incorporate Review Comments	13-May-10	07-Jul-10	40.0d	PC0085	PC0095	279.0d																
PC0095	Issue HPS Conceptual Design Report		07-Jul-10	0.0d	PC0090	PC0100	279.0d																
PC0100	PCS Conceptual Design Complete		04-Aug-10	0.0d	PC0095	PM220	279.0d																
C.Q.10.20.50.01.01	Turbine Generator System	02-Oct-08	30-Sep-09	245.0d			279.0d																
PC0105	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	PC0110	279.0d																
PC0110	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	PC0105	PC0115	279.0d																
PC0115	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	PC0110	PC0120	279.0d																
PC0120	Conceptual SDOs/Specs	11-Jun-09	30-Sep-09	80.0d	PC0115	PC0070	279.0d																
C.Q.10.20.50.01.02	Main Stream System	02-Oct-08	30-Sep-09	245.0d			279.0d																
PC0125	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	PC0130	279.0d																
PC0130	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	PC0125	PC0135	279.0d																
PC0135	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	PC0130	PC0140	279.0d																
PC0140	Conceptual SDOs/Specs	11-Jun-09	30-Sep-09	80.0d	PC0135	PC0070	279.0d																
C.Q.10.20.50.01.03	Feed Water & Condensate System	02-Oct-08	30-Sep-09	245.0d			279.0d																
PC0145	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	PC0150	279.0d																
PC0150	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	PC0145	PC0155	279.0d																
PC0155	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	PC0150	PC0160	279.0d																
PC0160	Conceptual SDOs/Specs	11-Jun-09	30-Sep-09	80.0d	PC0155	PC0070	279.0d																
C.Q.10.20.50.01.04	PCS Control & Instrumentation System	02-Oct-08	30-Sep-09	245.0d			279.0d																
PC0165	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	PC0170	279.0d																
PC0170	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	PC0165	PC0175	279.0d																
PC0175	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	PC0170	PC0180	279.0d																

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PCB180	Conceptual SDOs/Specs	11-Jun-09	30-Sep-09	80.0d	PCB175	PCB070	279.0d																
C.Q.10.20.50.01.05	PCB Electrical Distribution System	02-Oct-08	30-Sep-09	245.0d			279.0d																
PCB185	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	PCB190	279.0d																
PCB190	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	PCB185	PCB195	279.0d																
PCB195	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	PCB190	PCB200	279.0d																
PCB200	Conceptual SDOs/Specs	11-Jun-09	30-Sep-09	80.0d	PCB195	PCB070	279.0d																
C.Q.10.20.50.01.06	Turbine Building HVAC	02-Oct-08	30-Sep-09	245.0d			279.0d																
PCB205	Conceptual T&FRs	02-Oct-08	21-Jan-09	80.0d	PM150	PCB210	279.0d																
PCB210	Conceptual Studies Analysis	22-Jan-09	10-Jun-09	100.0d	PCB205	PCB215	279.0d																
PCB215	Conceptual Drawings/Models	11-Jun-09	30-Sep-09	80.0d	PCB210	PCB220	279.0d																
PCB220	Conceptual SDOs/Specs	11-Jun-09	30-Sep-09	80.0d	PCB215	PCB070	279.0d																
C.Q.10.20.60	Balance of Plant Systems (BOP)	02-Oct-08	07-Jul-10	445.0d			299.0d																
C.Q.10.20.60.01	BOP Conceptual Design Report	02-Oct-08	07-Jul-10	445.0d			299.0d																
BOP010	Conceptual Design T&FR	02-Oct-08	14-Jan-09	75.0d		BOP015	282.0d																
C.Q.10.20.60.01.01	Conceptual Studies & Alternatives Ana...	02-Oct-08	07-Jul-10	445.0d			299.0d																
BOP015	Site Selection Study	02-Oct-08	18-Mar-09	120.0d	BOP010	BOP020, BOP040, SA485	282.0d																
BOP020	Geo technical Site Investigation	25-Dec-08	29-Apr-09	90.0d	BOP015	BOP025	282.0d																
BOP025	Seismicity Review	30-Apr-09	02-Sep-09	90.0d	BOP020	BOP030	282.0d																
BOP030	Probabilistic Seismic Hazards Analysis	30-Apr-09	14-Apr-10	250.0d	BOP025	BOP035	282.0d																
BOP035	Issue Site Selection Study		14-Apr-10	0.0d	BOP030	LR140, SA605	282.0d																
BOP040	Conceptual Drawings/Models	19-Mar-09	08-Jul-09	80.0d	BOP015	BOP045	299.0d																
BOP045	Conceptual System Design Descriptions (SDOs)/Specs	19-Mar-09	08-Jul-09	80.0d	BOP040	BOP050	299.0d																
BOP050	Conceptual Design Report Preparation	09-Jul-09	28-Oct-09	80.0d	BOP045	BOP075, BOP055, BOP060	299.0d																
BOP055	Conceptual Cost Estimate	06-Aug-09	28-Oct-09	60.0d	BOP050	BOP075	479.0d																
BOP060	Conceptual Design Review	29-Oct-09	20-Jan-10	60.0d	BOP050	BOP065	299.0d																
BOP065	Independent Review	21-Jan-10	14-Apr-10	60.0d	BOP060	BOP070	299.0d																
BOP070	Conceptual Design Review Comment Incorporation	15-Apr-10	07-Jul-10	60.0d	BOP065	BOP075	299.0d																
BOP075	BOP Conceptual Design Report Complete		07-Jul-10	0.0d	BOP070, BOP050, BOP055	PM220	299.0d																
C.Q.10.30	Preliminary Design	15-Feb-11	27-Jan-14	768.0d			2927.0d																
C.Q.10.30.14	Safety Analysis Documents	06-Jul-11	17-Dec-13	640.0d			2955.0d																
SA560	Criticality Safety Assessment	06-Jul-11	08-Nov-11	90.0d	PM270	PM310, LR270	650.0d																
SA565	Safety Analysis	21-Dec-11	17-Dec-13	520.0d	PM270, SA710, SA578, SA575	LR270, PM310	100.0d																
C.Q.10.30.14.01	Internal Events PRA Model	04-Jul-12	25-Sep-12	60.0d			100.0d																
SA570	Finalize Internal Events PRA Model	04-Jul-12	25-Sep-12	60.0d	SA370, SA605	SA575, SA580, SA578	100.0d																
C.Q.10.30.14.02	External Events PRA Model	26-Sep-12	04-Dec-12	50.0d			100.0d																
SA575	Finalize External Events PRA Model	26-Sep-12	04-Dec-12	50.0d	SA570, SA605	SA578	100.0d																
C.Q.10.30.14.03	Event Consequence Analysis	12-Sep-12	04-Dec-12	60.0d			100.0d																
SA578	Finalize Dose analysis, including Thermal and Fluid Flow Analysis	12-Sep-12	04-Dec-12	60.0d	SA440, SA575, SA570	SA580, SA565	100.0d																
C.Q.10.30.14.04	Risk Analysis	05-Dec-12	07-May-13	110.0d			175.0d																
SA580	Event Sequence Final Quantification	05-Dec-12	08-Jan-13	25.0d	SA570, SA578	SA585, SA590, SA625	100.0d																
SA585	Risk Integration and Results Interpretation	09-Jan-13	12-Feb-13	25.0d	SA580	SA595, SA670, SA625	100.0d																
SA590	Uncertainty and Sensitivity Analysis	09-Jan-13	12-Feb-13	25.0d	SA580	SA625	235.0d																

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SA595	PRA Preliminary Design Report For Peer Review	13-Feb-13	26-Mar-13	30.0d	SA595	SA690	130.0d																
SA600	Finalize PRA Preliminary Design Report	27-Mar-13	07-May-13	30.0d	SA670	SA690	100.0d																
C.Q.10.30.14.05	Design and Licensing Support & Interface	04-Jul-12	11-Jun-13	245.0d			235.0d																
SA605	Design and Site Freeze for Final PRA	04-Jul-12		0.0d	SA485, BOP035, NH0730, HTG460	SA570, SA575	100.0d																
SA625	Final PRA based LBE's	13-Feb-13	19-Mar-13	25.0d	SA580, SA590, SA595	SA630	235.0d																
SA630	Final PRA Based Safety Classes	20-Mar-13	02-Apr-13	10.0d		SA645, SA650, SA655, SA660	235.0d																
SA645	Regulatory Design Criteria	03-Apr-13	07-May-13	25.0d	SA630	SA675	235.0d																
SA650	SSC Reliability and Capability Requirem...	03-Apr-13	07-May-13	25.0d	SA630	SA675	235.0d																
SA655	SSC Special Treatment Requirements	03-Apr-13	07-May-13	25.0d	SA630	SA675	235.0d																
SA660	Risk Confirmation of Defense-in-Depth	03-Apr-13	07-May-13	25.0d	SA630	SA675	235.0d																
SA670	PRA Independent Review	13-Feb-13	26-Mar-13	30.0d	SA585	SA600	100.0d																
SA675	Licensing Application PRA Review	08-May-13	11-Jun-13	25.0d	SA645, SA650, SA655, SA660	SA655	235.0d																
C.Q.10.30.14.06	Heat Transport Failures & Thermal Events	06-Jul-11	17-Dec-13	640.0d			2955.0d																
SA680	Validate Relevant Failures Experimentally	06-Jul-11	20-Dec-11	120.0d	SA330, PM270		3475.0d																
SA685	Compare Model Results to OPI/Accident ...	06-Jul-11	30-Aug-11	40.0d	SA330, PM270	SA690	540.0d																
SA690	Identify Plant Controls for SS and Transients	08-May-13	16-Jul-13	50.0d	SA685, SA600, SA695	SA695, SA700	100.0d																
SA695	Identify Safety Significant components (if relevant)	17-Jul-13	27-Aug-13	30.0d	SA690	SA705, NH0715, HTG445	100.0d																
SA700	Identify Equip Performance Changes for SS Components	17-Jul-13	24-Sep-13	50.0d	SA690		3015.0d																
SA705	Validate Equip Changes for Safety Significance (Experimentally)	28-Aug-13	05-Nov-13	50.0d	SA695	SA710	100.0d																
SA710	Model Failures w/ Credit for Equip Changes	06-Nov-13	17-Dec-13	30.0d	SA705	PM310, SA655	100.0d																
C.Q.10.30.20	Nuclear Heat Supply System (NHSS)	06-Jul-11	27-Aug-13	560.0d			180.0d																
C.Q.10.30.20.01	NHSS Preliminary Design	06-Jul-11	27-Aug-13	560.0d			180.0d																
NH0715	Preliminary TFR	14-Feb-12	27-Aug-13	401.0d	PM270, FL00190, SA695	NH0745	180.0d																
NH0720	Preliminary Design Drawings	06-Jul-11	16-Jan-13	401.0d	PM270	NH0745	339.0d																
NH0725	Update System Design Descriptions	06-Jul-11	16-Jan-13	401.0d	PM270	NH0735, NH0745, NH0745	219.0d																
NH0730	50% Review	23-May-12	03-Jul-12	30.0d	0E450, 0E435, PM270	NH0735, SA605	100.0d																
NH0735	Final Prelim Design Review	17-Jan-13	10-Apr-13	60.0d	NH0725, NH0730	NH0740, NH0745	219.0d																
NH0740	Independent Review	11-Apr-13	03-Jul-13	60.0d	NH0735	NH0745	219.0d																
NH0745	Long-Lead Procurement Specs	12-Apr-12	16-Jan-13	200.0d	NH0725	NH0750, NH0745	219.0d																
NH0745	NHSS Preliminary Design Complete		27-Aug-13	0.0d	NH0745, NH0740, NH0735, NH0725, NH0720, NH0715	PM310	180.0d																
C.Q.10.30.20.02	NHSS Procurement	17-Jan-13	03-Jul-13	120.0d			219.0d																
NH0750	Long-Lead Procurement	17-Jan-13	03-Jul-13	120.0d	NH0745	PM310	219.0d																
C.Q.10.30.30	Heat Transport System (HTS)	16-Feb-11	27-Jan-14	768.0d			72.0d																
C.Q.10.30.30.02	HTS Preliminary Design	16-Feb-11	27-Jan-14	768.0d			72.0d																
HT0445	Preliminary TFRs	10-Apr-13	27-Aug-13	100.0d	PM270, SA695	HT0480	180.0d																
HT0450	Preliminary Design Drawings	06-Jul-11	16-Jan-13	401.0d	PM270	HT0480	339.0d																
HT0455	Update System Design Descriptions	06-Jul-11	22-Nov-11	100.0d	PM270	HT0465, HT0475, HT0480	520.0d																
HT0460	50% Review	11-Apr-12	22-May-12	30.0d	PM270	HT0465, SA605	130.0d																

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HTG465	Final Prelim Design Review	12-Aug-13	04-Nov-13	80.0d	HTG455, HTG460, HTG725	HTG470	72.0d																
HTG470	Independent Review	04-Nov-13	27-Jan-14	80.0d	HTG465	HTG480	72.0d																
HTG475	Long-Lead Procurement Specs	16-Feb-11	22-Nov-11	200.0d	HTG455	HTG480	640.0d																
HTG480	HTS Preliminary Design Complete	27-Jan-14		0.0d	HTG475, HTG470, HTG455, HTG460, HTG445	PM310	72.0d																
C.Q.10.30.30.03	HTS Procurement	10-Oct-11	07-Sep-12	240.0d			24.0d																
HTG490	Pilot Plant Circulator	10-Oct-11	07-Sep-12	240.0d	HTG655	HTG670	24.0d																
C.Q.10.30.40	Hydrogen Production System (HPS)	14-Mar-12	30-Jul-13	360.0d			200.0d																
C.Q.10.30.40.02	HPS Preliminary Design	14-Mar-12	30-Jul-13	360.0d			200.0d																
HPG430	Integrate Pilot Plant w/ Design	14-Mar-12	12-Feb-13	240.0d	PM396	HPG730, PM310	320.0d																
HPG435	Preliminary Design - Vendor	14-Mar-12	30-Jul-13	360.0d	PM396	HPG440	200.0d																
HPG440	HPS Preliminary Design Complete	30-Jul-13		0.0d	HPG435	PM310	200.0d																
C.Q.10.30.50	Power Conversion System (PCS)	16-Feb-11	03-Jul-13	621.0d			219.0d																
C.Q.10.30.50.01	PCS Preliminary Design	16-Feb-11	03-Jul-13	621.0d			219.0d																
PCG425	Preliminary TFR	06-Jul-11	22-Nov-11	100.0d	PM270	PCG440	390.0d																
PCG430	Preliminary Design Drawings	06-Jul-11	16-Jan-13	401.0d	PM270	PCG445	219.0d																
PCG435	Update System Design Descriptions	06-Jul-11	22-Nov-11	100.0d	PM270	PCG445, PCG455	520.0d																
PCG440	50% Review	11-Apr-12	22-May-12	30.0d	PCG425	PCG445	390.0d																
PCG445	Final Prelim Design Review	17-Jan-13	10-Apr-13	80.0d	PCG435, PCG440, PCG430	PCG450	219.0d																
PCG450	Independent Review	11-Apr-13	03-Jul-13	80.0d	PCG445	PCG455	219.0d																
PCG455	Long-Lead Procurement Specs	16-Feb-11	22-Nov-11	200.0d	PCG435	PCG460, PCG455	520.0d																
PCG456	PCS Preliminary Design Complete	03-Jul-13		0.0d	PCG450, PCG455	PM310	219.0d																
C.Q.10.30.50.02	PCS Procurement	23-Nov-11	09-May-12	120.0d			520.0d																
PCG460	Long-Lead Procurement	23-Nov-11	09-May-12	120.0d	PCG455	PM310	520.0d																
C.Q.10.30.60	Balance of Plant Systems (BOP)	16-Feb-11	16-Jan-13	501.0d			339.0d																
C.Q.10.30.60.01	BOP Preliminary Design	16-Feb-11	16-Jan-13	501.0d			339.0d																
BOP105	Preliminary TFR	06-Jul-11	22-Nov-11	100.0d	PM270	BOP120, BOP136	390.0d																
BOP110	Preliminary Design Drawings	06-Jul-11	16-Jan-13	401.0d	PM270	BOP136	339.0d																
BOP115	Update System Design Descriptions	06-Jul-11	22-Nov-11	100.0d	PM270	BOP125, BOP135, BOP136	520.0d																
BOP120	50% Review	11-Apr-12	22-May-12	30.0d	BOP105	BOP125	390.0d																
BOP125	Final Prelim Design Review	23-May-12	14-Aug-12	80.0d	BOP115, BOP120	BOP130	390.0d																
BOP130	Independent Review	15-Aug-12	06-Nov-12	80.0d	BOP125	BOP136	390.0d																
BOP135	Long-Lead Procurement Specs	16-Feb-11	22-Nov-11	200.0d	BOP115	BOP136	640.0d																
BOP136	BOP Preliminary Design Complete	16-Jan-13		0.0d	BOP135, BOP130, BOP115, BOP110, BOP105	PM310	339.0d																
C.Q.10.40	Final Design	28-Apr-14	21-Mar-17	757.0d			2.0d																
C.Q.10.40.16	Construction and Fab Support Bldg Final Design	28-Apr-14	12-Oct-15	381.0d			378.0d																
PE240	Welding Facility Final Design	28-Apr-14	27-Apr-15	261.0d	PM310	PE245	378.0d																
PE242	Fabrication Facility Final Design	28-Apr-14	27-Apr-15	261.0d	PM310	PE245	378.0d																
PE245	50% Review - Final Design	28-Apr-15	20-Jul-15	80.0d	PE242, PE240	PE248	378.0d																
PE248	Incorporate Review Comments - Final Design	21-Jul-15	12-Oct-15	80.0d	PE245	PE250	378.0d																
PE250	Issue for Construction - Construction and Fab Support Bldg	12-Oct-15		0.0d	PE248	PM700, PM710	378.0d																
C.Q.10.40.20	Nuclear Heat Supply System Final Design	28-Apr-14	10-Feb-17	730.0d			29.0d																
C.Q.10.40.20.01	NHSS Final Design	28-Apr-14	10-Feb-17	730.0d			29.0d																
NHG755	Final TFR	03-Feb-15	22-Jun-15	100.0d	MTH110, MTH135, MTH150, MTH155, MTH195, PM310	NHG790	338.0d																

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NH8760	Final Design Drawings	28-Apr-14	26-Aug-16	610.0d	PM310	NH8790	29.0d																
NH8765	Final Construction Specifications	28-Apr-14	26-Aug-16	610.0d	PM310	NH8790	29.0d																
NH8770	Procurement Specifications	28-Apr-14	26-Aug-16	610.0d	PM310	NH8790, NH8775, NH8780	29.0d																
NH8775	System Design Descriptions	23-Nov-15	26-Aug-16	200.0d	NH8770, PM310	NH8790	29.0d																
NH8780	Operating Procedures, Manuals & Documentation	23-Nov-15	26-Aug-16	200.0d	NH8770, PM310	NH8785, NH8790	29.0d																
NH8785	Final Construction Cost Estimate	25-Apr-16	26-Aug-16	90.0d	NH8780	NH8790	29.0d																
NH8790	90% Review	29-Aug-16	19-Nov-16	90.0d	NH8780, NH8785, NH8775, NH8770, NH8765, NH8760, NH8755	NH8795	29.0d																
NH8795	Incorporate Review Comments	21-Nov-16	10-Feb-17	90.0d	NH8790	NH8800	29.0d																
NH8800	Issue For Construction	10-Feb-17	10-Feb-17	0.0d	NH8795	PM440	29.0d																
C.Q.10.40.20.02	NH88 Procurement	28-Apr-14	12-Aug-16	600.0d			159.0d																
NH8805	NH88 Procurement	28-Apr-14	12-Aug-16	600.0d	PM310, NH8121	PM500	159.0d																
C.Q.10.40.30	Heat Transport System Final Design	28-Apr-14	10-Feb-17	730.0d			29.0d																
C.Q.10.40.30.03	HTS Final Design	28-Apr-14	10-Feb-17	730.0d			29.0d																
HT8510	Final TFR	28-Apr-14	12-Sep-14	100.0d	FL81630, PM310	HT8545	539.0d																
HT8515	Final Design Drawings	28-Apr-14	26-Aug-16	610.0d	PM310	HT8545	29.0d																
HT8520	Final Construction Specifications	28-Apr-14	26-Aug-16	610.0d	PM310	HT8545	29.0d																
HT8525	Procurement Specifications	28-Apr-14	26-Aug-16	610.0d	PM310	HT8545, HT8530, HT8535	29.0d																
HT8530	System Design Descriptions	23-Nov-15	26-Aug-16	200.0d	HT8525, PM310	HT8545	29.0d																
HT8535	Operating Procedures, Manuals & Documentation	23-Nov-15	26-Aug-16	200.0d	HT8525, PM310	HT8540, HT8545	29.0d																
HT8540	Final Construction Cost Estimate	25-Apr-16	26-Aug-16	90.0d	HT8535	HT8545	29.0d																
HT8545	90% Review	29-Aug-16	19-Nov-16	90.0d	HT8535, HT8540, HT8530, HT8525, HT8520, HT8515, HT8510	HT8550	29.0d																
HT8550	Incorporate Review Comments	21-Nov-16	10-Feb-17	90.0d	HT8545	HT8555	29.0d																
HT8555	Issue For Construction	10-Feb-17	10-Feb-17	0.0d	HT8550	PM440	29.0d																
C.Q.10.40.30.04	HTS Procurement	28-Apr-14	12-Aug-16	600.0d			159.0d																
HT8560	HTS Procurement	28-Apr-14	12-Aug-16	600.0d	PM310, HT8311	PM500	159.0d																
C.Q.10.40.40	Hydrogen Production System Final Design	28-Apr-14	21-Mar-17	757.0d			2.0d																
C.Q.10.40.40.02	Final NGNP-Coupled Design	28-Apr-14	21-Mar-17	757.0d			2.0d																
HP8500	Final Design Drawings	28-Apr-14	12-Sep-14	100.0d	PM310	HP8530	539.0d																
HP8505	Final Construction Specifications	28-Apr-14	26-Aug-16	610.0d	PM310	HP8530	29.0d																
HP8510	Procurement Specifications	28-Apr-14	26-Aug-16	610.0d	PM310	HP8530, HP8515, HP8520	29.0d																
HP8515	System Design Descriptions	23-Nov-15	26-Aug-16	200.0d	HP8510, PM310	HP8530	29.0d																
HP8520	Operating Procedures, Manuals & Documentation	23-Nov-15	26-Aug-16	200.0d	HP8510, PM310	HP8525, HP8530	29.0d																
HP8525	Final Construction Cost Estimate	25-Apr-16	26-Aug-16	90.0d	HP8520	HP8530	29.0d																
HP8530	90% Review	29-Aug-16	19-Nov-16	90.0d	HP8520, HP8525, HP8515, HP8510, HP8505, HP8500	HP8535	29.0d																
HP8535	Incorporate Review Comments	21-Nov-16	10-Feb-17	90.0d	HP8530	HP8540	29.0d																
HP8540	Issue For Construction	10-Feb-17	10-Feb-17	0.0d	HP8535	PM440	29.0d																
HP8545	Start Final Design	29-Jul-15		0.0d	HP8765	HP8550	42.0d																
HP8550	Final NGNP-Coupled Design	29-Jul-15	20-Sep-16	300.0d	HP8545	HP8555	42.0d																
HP8555	Modify Design Based on TRL 7 Results	16-Nov-16	21-Mar-17	90.0d	HP8550, HP8765	HP8560	2.0d																
HP8560	Complete NGNP-Coupled H2 Design	21-Mar-17	21-Mar-17	0.0d	HP8555	HP8790, PM440	2.0d																

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C.Q.10.40.50	Power Conversion System Final Design	28-Apr-14	10-Feb-17	730.0d			29.0d																
C.Q.10.40.50.01	PCS Final Design	28-Apr-14	10-Feb-17	730.0d			29.0d																
PCS465	Final TFR	28-Apr-14	12-Sep-14	100.0d	PM310	PCS500	539.0d																
PCS470	Final Design Drawings	28-Apr-14	26-Aug-16	610.0d	PM310	PCS500	29.0d																
PCS475	Final Construction Specifications	28-Apr-14	26-Aug-16	610.0d	PM310	PCS500	29.0d																
PCS480	Procurement Specifications	28-Apr-14	26-Aug-16	610.0d	PM310	PCS500, PCS485, PCS490	29.0d																
PCS485	System Design Descriptions	23-Nov-15	26-Aug-16	200.0d	PCS480, PM310	PCS500	29.0d																
PCS490	Operating Procedures, Manuals & Documentation	23-Nov-15	26-Aug-16	200.0d	PCS480, PM310	PCS485, PCS500	29.0d																
PCS495	Final Construction Cost Estimate	25-Apr-16	26-Aug-16	90.0d	PCS490	PCS500	29.0d																
PCS500	90% Review	29-Aug-16	18-Nov-16	60.0d	PCS490, PCS495, PCS485, PCS490, PCS475, PCS470, PCS465	PCS505	29.0d																
PCS505	Incorporate Review Comments	21-Nov-16	10-Feb-17	60.0d	PCS500	PCS510	29.0d																
PCS510	Issue For Construction	10-Feb-17	10-Feb-17	0.0d	PCS505	PM440	29.0d																
C.Q.10.40.50.02	PCS Procurement	28-Apr-14	09-Nov-16	663.0d			95.0d																
PCS515	PCS Procurement	28-Apr-14	09-Nov-16	663.0d	PM310	PM500	95.0d																
C.Q.10.40.60	Balance of Plant & Overall Site Final Design	28-Apr-14	10-Feb-17	730.0d			29.0d																
C.Q.10.40.60.01	BOP Final Design	28-Apr-14	10-Feb-17	730.0d			29.0d																
BOP140	Final TFR	28-Apr-14	12-Sep-14	100.0d	PM310	BOP180	539.0d																
BOP145	Final Design Drawings	28-Apr-14	26-Aug-16	610.0d	PM310	BOP180	29.0d																
BOP150	Final Construction Specifications	28-Apr-14	26-Aug-16	610.0d	PM310	BOP180	29.0d																
BOP155	Procurement Specifications	28-Apr-14	26-Aug-16	610.0d	PM310	BOP180, BOP160, BOP165	29.0d																
BOP160	System Design Descriptions	23-Nov-15	26-Aug-16	200.0d	BOP155, PM310	BOP180	29.0d																
BOP165	Operating Procedures, Manuals & Documentation	23-Nov-15	26-Aug-16	200.0d	BOP155, PM310	BOP170, BOP180	29.0d																
BOP170	Final Construction Cost Estimate	25-Apr-16	26-Aug-16	90.0d	BOP165	BOP180	29.0d																
BOP180	90% Review	29-Aug-16	18-Nov-16	60.0d	BOP165, BOP170, BOP160, BOP155, BOP150, BOP145, BOP140	BOP185	29.0d																
BOP185	Incorporate Review Comments	21-Nov-16	10-Feb-17	60.0d	BOP180	BOP190	29.0d																
BOP190	Issue For Construction	10-Feb-17	10-Feb-17	0.0d	BOP185	PM440	29.0d																
C.Q.10.40.60.02	BOP Procurement	28-Apr-14	09-Nov-16	663.0d			95.0d																
BOP195	BOP Procurement	28-Apr-14	09-Nov-16	663.0d	PM310	PM500	95.0d																
C.Q.10.50	NGNP Research & Development	01-Oct-07	19-Aug-22	3858.0d			692.0d																
C.Q.10.50.01	Heat Transport Experiments	13-Oct-08	31-Oct-15	2086.0d			2207.0d																
C.Q.10.50.01.01	Heat Transport Test Conditions	13-Oct-08	07-Oct-11	766.0d			3507.0d																
HTG575	Document Candidate IHX/PHX Materials	05-Jan-09	27-Mar-09	60.0d		HTG590, HTG580	24.0d																
HTG580	Document Candidate IHX/PHX Designs	13-Oct-08	27-Mar-09	120.0d	HTG575	HTG590, HTG585	24.0d																
HTG585	Document Candidate IHX/PHX Fluids	05-Jan-09	27-Mar-09	60.0d	HTG580	HTG590	24.0d																
HTG590	Develop Heat Exchanger Test Plan (Umbrella)	30-Mar-09	04-Dec-09	180.0d	HTG575, HTG580, HTG585	HTG595, HTG600	24.0d																
HTG595	Validate TRL 5	12-Sep-11	07-Oct-11	20.0d	HTG590, HTG595	HTG662	3507.0d																
C.Q.10.50.01.02	Lab Scale Testing	05-Jan-09	09-Sep-11	700.0d			132.0d																
HTG600	Develop Bench Scale Test Plan (Detailed)	22-Jun-09	04-Dec-09	120.0d	HTG590	HTG605	24.0d																
HTG605	Design Bench Scale Test Rig(s)	07-Dec-09	26-Mar-10	80.0d	HTG600	HTG610	24.0d																
HTG610	Fab Bench Scale Test Rig(s)	29-Mar-10	16-Jul-10	80.0d	HTG605	HTG615	24.0d																
HTG615	Procure/Fab HX Sections for Testing	29-Mar-10	10-Sep-10	120.0d	HTG610	HTG620, HTG665	24.0d																
HTG620	Pressure/Leak Testing	13-Sep-10	08-Oct-10	20.0d	HTG615	HTG625	24.0d																

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HTG625	Cyclic Pressure Testing	11-Oct-10	31-Dec-10	60.0d	HTG620	HTG630	24.0d																
HTG630	Flow Testing	03-Jan-11	25-Mar-11	60.0d	HTG625	HTG640, HTG655	24.0d																
HTG635	Model Predicted HX Performance (CFD)	05-Jan-09*	11-Sep-09	180.0d		HTG640	424.0d																
HTG640	Evaluate Modeled vs. Actual Performance	28-Mar-11	22-Apr-11	20.0d	HTG630, HTG635	HTG645	24.0d																
HTG645	Revise CFD Model	25-Apr-11	17-Jun-11	40.0d	HTG640	HTG660, HTG695	24.0d																
HTG650	Identify Additional Components for Testing (i.e. - valves)	05-Jan-09*	19-Jun-09	120.0d		HTG655	592.0d																
HTG655	Test Additional Components	28-Mar-11	09-Sep-11	120.0d	HTG650, HTG630	HTG710, HTG595	132.0d																
C.Q.10.50.01.03 HTG Pilot Scale Testing		06-Dec-10	09-Sep-13	720.0d			3027.0d																
HTG660	Develop Pilot Scale Test Plan (Detailed)	28-Feb-11	12-Aug-11	120.0d	HTG645	HTG675, HTG665	24.0d																
HTG662	Revise/Update Test Plan For Pilot Scale	10-Oct-11	04-Nov-11	20.0d	HTG655		3507.0d																
HTG665	Design Pilot Scale Test Loop	25-Apr-11	07-Oct-11	120.0d	HTG660, HTG615	HTS490	24.0d																
HTG670	Fab Pilot Scale Test Loop	23-Apr-12	13-Aug-12	80.0d	HTG675, HTS490	HTG680, HTG685, HTG690	24.0d																
HTG675	Procure/Fab HX Sections for Testing	05-Dec-10	12-Aug-11	180.0d	HTG660	HTG670, HTG680	284.0d																
HTG680	Pressure/Leak Testing	13-Aug-12	10-Sep-12	20.0d	HTG675, HTG670	HTG685	24.0d																
HTG685	Cyclic Pressure Testing	10-Sep-12	03-Dec-12	60.0d	HTG680, HTG670	HTG690	24.0d																
HTG690	Flow Testing	03-Dec-12	25-Feb-13	60.0d	HTG685, HTG670	HTG700, HTG725	24.0d																
HTG695	Model Predicted HX Performance (CFD)	20-Jun-11	24-Feb-12	180.0d	HTG645	HTG700	284.0d																
HTG700	Evaluate Modeled vs. Actual Performance	25-Feb-13	25-Mar-13	20.0d	HTG690, HTG695	HTG705, HTG730	24.0d																
HTG705	Revise CFD Model	25-Mar-13	20-May-13	40.0d	HTG700	HTG765, HTG735, HTG735	24.0d																
HTG710	Identify Additional Components for Testing	12-Sep-11	24-Feb-12	120.0d	HTG655	HTG715	132.0d																
HTG715	Develop Test Plan for components	27-Feb-12	15-Jun-12	80.0d	HTG710	HTG720	132.0d																
HTG720	Procure/Fab Components for Testing	18-Jun-12	30-Nov-12	120.0d	HTG715	HTG725	132.0d																
HTG725	Test Additional Components	25-Feb-13	12-Aug-13	120.0d	HTG720, HTG690	HTS465, HTG780, HTG727	72.0d																
HTG727	Validate TRL 6	12-Aug-13	09-Sep-13	20.0d	HTG725	SE405	144.0d																
C.Q.10.50.01.04 Large Heat Transport Experiments		25-Mar-13	31-Oct-16	940.0d			24.0d																
HTG730	Final Selection of HX Design/Material	25-Mar-13	25-Mar-13	0.0d	HTG700	HTG735	64.0d																
HTG735	Develop Engr Scale Test Plan (Detailed)	20-May-13	04-Nov-13	120.0d	HTG705, HTG730, HTG705	HTG740	24.0d																
HTG740	Design Engr Scale Tests	04-Nov-13	27-Jan-14	60.0d	HTG735	HTG745	24.0d																
HTG745	Engr Scale HX Received	27-Jan-14	27-Jan-14	0.0d	HTG740	HTG750	24.0d																
HTG750	Install HX Sections in CTF	27-Jan-14	24-Mar-14	40.0d	CTF830, HTG745	HTG755	24.0d																
HTG755	Perform CTF Installation Testing	24-Mar-14	21-Apr-14	20.0d	HTG750	HTG760	24.0d																
HTG760	CTF Testing of HX	21-Apr-14	05-Oct-14	120.0d	HTG755, CTF920, SE405	HTG770	24.0d																
HTG765	Model Predicted HX Performance (CFD)	25-Mar-13	20-May-13	40.0d	HTG705	HTG770	384.0d																
HTG770	Evaluate Modeled vs. Actual Performance	05-Oct-14	03-Nov-14	20.0d	HTG765, HTG760	HTG775	24.0d																
HTG775	IHX Engr-Scale Demo Complete	03-Nov-14	03-Nov-14	0.0d	HTG770	HTG780	24.0d																
HTG780	Identify Additional Components for testing	03-Nov-14	20-Apr-15	120.0d	HTG725, HTG775	HTG785	24.0d																
HTG785	Develop Test Plan for Components	20-Apr-15	15-Jun-15	40.0d	HTG780	HTG790	24.0d																
HTG790	Procure/Fab Components for Testing	15-Jun-15	30-Nov-15	120.0d	HTG785	HTG795	24.0d																
HTG795	Install Components in CTF for Testing	30-Nov-15	16-May-16	120.0d	HTG790	HTG800	24.0d																
HTG800	Test Additional Components	15-May-16	31-Oct-16	120.0d	HTG795	SE490	24.0d																
C.Q.10.50.02 HPS Research and Development		01-Oct-08	15-Nov-16	2105.0d			2195.0d																
C.Q.10.50.02.01 Demonstrate Integrated Lab Scale Operations		01-Oct-08	14-Apr-09	125.0d			2.0d																
HPG565	Incorporate H2 Recycle in ILS	01-Oct-08*	09-Dec-08	50.0d		HPG570, HPG575	2.0d																
HPG570	Incorporate Heat Recuperation in ILS	01-Oct-08	09-Dec-08	50.0d	HPG565	HPG575	2.0d																
HPG575	Perform Extended Integrated Operations	10-Dec-08	14-Apr-09	90.0d	HPG570, HPG565	HPG580	2.0d																
HPG580	Complete Lab Scale Demonstration	14-Apr-09	00.0d	HPG575	HPG525, HPG695		2.0d																

█ Remaining Level of Effort
 █ Actual Work
 █ Critical Remaining Work
█ Actual Level of Effort
 █ Remaining Work
 ◻ Start Constraint

Idaho National Laboratory

NGNP INTEGRATED SCHEDULE
DEVELOPMENT PLAN

Identifier: PLN-2924

Revision: 1

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NGNP INTEGRATED PLANNING SCHEDULE

9-29-2008

Activity ID	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	2023
C.Q.10.50.02.02	HPB Studies and Analysis	02-Mar-09	07-Oct-11	680.0d			3527.0d																
C.Q.10.50.02.02.01	Develop Water Supply System	15-Apr-09	04-Aug-09	80.0d			282.0d																
HPB585	Determine Water Supply Requirements	15-Apr-09	09-Jun-09	40.0d	HPB230	HPB590	282.0d																
HPB590	Incorporate H2O Reqs in Pilot Plant Design	10-Jun-09	04-Aug-09	40.0d	HPB585	HPB695	282.0d																
C.Q.10.50.02.02.02	Develop Flow Distribution Manifold	15-Apr-09	16-Mar-10	240.0d			2.0d																
HPB595	Design Flow Distribution Manifold	15-Apr-09	29-Sep-09	120.0d	HPB230	HPB600	2.0d																
HPB600	Fab Flow Distribution Manifold	30-Sep-09	22-Dec-09	60.0d	HPB595	HPB605	2.0d																
HPB605	Test (single effects) Flow Distr Manifold	23-Dec-09	16-Mar-10	60.0d	HPB600	HPB690	2.0d																
C.Q.10.50.02.02.03	SOEC Degradation Mechanisms	02-Mar-09	22-Apr-11	560.0d			3647.0d																
HPB610	Analyze Degradation Mechanisms	30-Mar-09	22-Apr-11	540.0d	HPB630		3647.0d																
HPB615	Perform First Set of ten 10X10 Long Term tests	02-Mar-09	04-Dec-09	200.0d		HPB620, HPB625, HPB635	54.0d																
HPB620	Perform SOEC Spectroscopy (1st set)	07-Dec-09	26-Feb-10	60.0d	HPB615	HPB630	3827.0d																
HPB625	Perform 2nd Set of ten 10X10 Long Term Tests	07-Dec-09	05-Nov-10	240.0d	HPB615	HPB630	3647.0d																
HPB630	Perform SOEC Spectroscopy (2nd set)	08-Nov-10	28-Jan-11	60.0d	HPB625, HPB620	HPB610	3647.0d																
HPB635	Investigate St.Gobain Cell Technology	02-Mar-09	04-Dec-09	200.0d	HPB615	HPB640, HPB645	54.0d																
HPB640	Perform St.gobain SOEC Long Term Tests	07-Dec-09	21-May-10	120.0d	HPB635	HPB655	54.0d																
HPB645	Investigate NASA Cell Technology	02-Mar-09	04-Dec-09	200.0d	HPB635	HPB650	54.0d																
HPB650	Perform NASA SOEC Long Term Tests	07-Dec-09	21-May-10	120.0d	HPB645	HPB655	54.0d																
HPB655	Complete Final SOEC Selection		21-May-10	0.0d	HPB650, HPB640	HPB665, HPB675	54.0d																
C.Q.10.50.02.02.04	Develop SOEC Manufacturing Process	14-Sep-09	07-Oct-11	540.0d			3527.0d																
HPB660	Evaluate SOEC Manufacturing Processes	14-Sep-09	28-Jan-11	360.0d		HPB665	3527.0d																
HPB665	Select manufacturer	31-Jan-11	22-Apr-11	60.0d	HPB665, HPB660	HPB670	3527.0d																
HPB670	Demonstrate Process	25-Apr-11	07-Oct-11	120.0d	HPB665		3527.0d																
C.Q.10.50.02.02.05	Optimize SOEC Technology	24-May-10	12-Aug-11	320.0d			54.0d																
HPB675	Final 10X10 Stack testing	24-May-10	25-Feb-11	200.0d	HPB665	HPB680	54.0d																
HPB680	Scale-up Manufacturing Process	24-May-10	25-Feb-11	200.0d	HPB675	HPB685	54.0d																
HPB685	Fab SOECs for Engineering Scale Demo	28-Feb-11	12-Aug-11	120.0d	HPB680	HPB700	54.0d																
C.Q.10.50.02.03	Large Scale Hydrogen Experiments	17-Mar-10	17-Dec-13	980.0d			100.0d																
C.Q.10.50.02.03.01	Develop Flow Distribution Manifold	17-Mar-10	08-Jun-10	60.0d			2.0d																
HPB690	Incorporate Test Results In Pilot Plant De...	17-Mar-10	08-Jun-10	60.0d	HPB605	HPB695	2.0d																
C.Q.10.50.02.03.02	Pilot Plant Demonstration (Pressurized)	01-Sep-10	25-Oct-11	300.0d			2.0d																
HPB695	Design 200 KW Pilot Plant	01-Sep-10	10-May-11	180.0d	HPB580, HPB590, HPB590	HPB700	2.0d																
HPB700	Construct 200KW Pilot Plant	11-May-11	25-Oct-11	120.0d	HPB695, HPB685	HPB705	2.0d																
C.Q.10.50.02.03.03	Operate 200 KW Pilot Plant	26-Oct-11	17-Dec-13	560.0d			100.0d																
HPB705	Test Single Pressurized Module (50kW, 5000 hrs)	26-Oct-11	05-Jun-12	160.0d	HPB700	HPB710, HPB715	2.0d																
HPB710	Post Experiment Destructive Testing	05-Jun-12	28-Aug-12	60.0d	HPB705	HPB725	262.0d																
HPB715	Test Pressurized Multi-Modules (200kW, 10,000 hrs)	06-Jun-12	27-Aug-13	320.0d	HPB705	HPB720, HPB725	2.0d																
HPB720	Post Experiment Destructive Testing	28-Aug-13	19-Nov-13	60.0d	HPB715	HPB725, HPB730	22.0d																
HPB725	Evaluate O2 Handling, Pressure Vessel/Insulation, Distr. Manifold, SOEC Performance	28-Aug-13	17-Dec-13	80.0d	HPB715, HPB720, HPB710	HPB730, HPB735	2.0d																
HPB730	TRL 6 Validated		17-Dec-13	0.0d	HPB725, HPB430, HPB720	PM305	100.0d																
C.Q.10.50.02.04	Engineering Scale Demonstration	10-Apr-13	15-Nov-16	940.0d			2.0d																
HPB735	Design 5 MW Engineering Demo	10-Apr-13	11-Mar-14	240.0d	HPB725	HPB740	2.0d																
HPB740	Construct 5 MW Engineering Demo	12-Mar-14	26-Aug-14	120.0d	HPB735	HPB745	2.0d																
HPB745	Install 5 MW Demo	27-Aug-14	18-Nov-14	60.0d	HPB740, CTF830	HPB750	2.0d																

█ Remaining Level of Effort
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 ◻ Start Constraint

Idaho National Laboratory

NGNP INTEGRATED SCHEDULE DEVELOPMENT PLAN

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NGNP INTEGRATED PLANNING SCHEDULE

9-29-2008

Activity ID	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	2023
HP8750	Test Single Large Scale Module (5 Mwe, 1MWt)	19-Nov-14	05-May-15	120.0d	HP8745	HP8755, HP8770	2.0d																
HP8755	Post Engr Scale Destructive Testing	06-May-15	28-Jul-15	80.0d	HP8750	HP8760	42.0d																
HP8760	Evaluate O2 Handling, Press Vessel/Insulation, Distr. Manifold, SOECs	06-May-15	28-Jul-15	80.0d	HP8755	HP8765	42.0d																
HP8765	TRL 7 Achieved		28-Jul-15	0.0d	HP8760	HP8545	42.0d																
HP8770	Test Multiple Modules - Pilot (15 MWe, 3 ...)	06-May-15	31-May-16	280.0d	HP8750	HP8775	2.0d																
HP8775	Post-Pilot Destructive Testing	01-Jun-16	23-Aug-16	80.0d	HP8770	HP8780	2.0d																
HP8780	Evaluate O2 Handling, Press Vessel/Insulation, Distr. Manifold	24-Aug-16	15-Nov-16	80.0d	HP8775	HP8785	2.0d																
HP8785	TRL 7 Validated		15-Nov-16	0.0d	HP8780	HP8555	2.0d																
C.Q.10.50.10 Fuel		01-Oct-07	19-Aug-22	3889.0d			692.0d																
C.Q.10.50.10.01 AGR-1 Irradiation Shakedown Small Coater Fuel Development		01-Oct-07	23-Apr-13	1424.0d			271.0d																
C.Q.10.50.10.01.01 Fuel Development		01-Oct-07	01-Oct-07	0.0d			79.0d																
FL80100	Fuel Fabrication and Development	01-Oct-07	01-Oct-07	0.0d		FL80105	79.0d																
C.Q.10.50.10.01.02 Design & Fabrication		01-Oct-07	01-Oct-07	0.0d			79.0d																
FL80105	Design & Fabrication FY03-FY07	01-Oct-07	01-Oct-07	0.0d	FL80100	FL80110	79.0d																
FL80110	Ready to Insert	01-Oct-07	01-Oct-07	0.0d	FL80105	FL80115	79.0d																
C.Q.10.50.10.01.03 Irradiation		01-Oct-07	17-Aug-09	463.0d			79.0d																
FL80115	AGR-1 Irradiation	01-Oct-07	17-Aug-09	490.0d	FL80110	FL80120, FL80117	79.0d																
FL80117	AGR-1 Data Analysis	01-Oct-07	17-Aug-09	490.0d	FL80115	FL80120, FL80550	79.0d																
FL80120	AGR-1 Irradiation Complete		17-Aug-09	0.0d	FL80115, FL80117	FL80130, FL80885, FL80350	79.0d																
C.Q.10.50.10.01.04 PIE & Safety Testing		01-Oct-07	23-Apr-13	1424.0d			271.0d																
FL80130	AGR-1 Cool-down	17-Aug-09	16-Feb-10	131.0d	FL80120	FL80145, FL80150, FL80155	271.0d																
FL80135	General PIE Planning 03-07	01-Oct-07	01-Oct-07	0.0d		FL80140	530.0d																
FL80140	Validation of a Technique to Disassemble AGR-1 Test	01-Oct-07	30-Sep-08	261.0d	FL80135	FL80150	530.0d																
FL80145	General PIE Planning & Facility Preps	27-May-08	16-Feb-10	450.0d	FL80130	FL80160	301.0d																
FL80150	PIE Planning for AGR-1	17-Aug-09	16-Feb-10	131.0d	FL80130, FL80140	FL80160	301.0d																
FL80155	Test Train Receipt & Inspection	16-Feb-10	30-Mar-10	30.0d	FL80130	FL80160	271.0d																
FL80160	Capsule Disassembly & Inspection	30-Mar-10	09-Nov-10	160.0d	FL80155, FL80145, FL80150	FL80165, FL80175, FL80885	271.0d																
FL80165	Safety Testing	25-May-10	09-Oct-12	620.0d	FL80160	FL80170, FL80185	271.0d																
FL80170	Fuel Characterization	25-May-10	01-Feb-11	180.0d	FL80165	FL80185	711.0d																
FL80175	ORNL Receipt Inspection	20-Jul-10	31-Aug-10	30.0d	FL80160	FL80180	661.0d																
FL80180	ORNL Safety Testing	31-Aug-10	12-Apr-11	160.0d	FL80175	FL80185	661.0d																
FL80185	Final PIE Report AGR-1	09-Oct-12	23-Apr-13	140.0d	FL80180, FL80170, FL80165	FL80190	271.0d																
FL80190	AGR-1 PIE Complete		23-Apr-13	0.0d	FL80185	FL80922, NH8715	271.0d																
C.Q.10.50.10.02 AGR-2 Irradiation Pilot Scale Coater Fuel Performance		01-Oct-07	04-Sep-15	2043.0d			2507.0d																
C.Q.10.50.10.02.01 Fuel Fabrication		01-Oct-07	26-Jun-09	428.0d			3306.0d																
FL80200	Upgrade and Composite Existing NUOCO 425um Kernels	02-Jan-08	25-Mar-08	80.0d		FL80205	79.0d																
FL80205	Restart Kernel Fab Line	21-Jan-08	28-Mar-08	50.0d	FL80200	FL80210	75.0d																
FL80210	Fab UO2 425 um Kernels (10kg)	31-Mar-08	30-May-08	45.0d	FL80205	FL80212, FL80214, FL80230	75.0d																
FL80212	Blend, Upgrade & Characterize UO2 425 um Kernels (10kg)	02-Jun-08	19-Jun-08	14.0d	FL80210	FL80230	75.0d																
FL80214	Fab UO2 500 um Kernels (10kg)	05-Jun-08	19-Aug-08	54.0d	FL80210	FL80216	116.0d																
FL80216	Blend, Upgrade & Characterize UO2 500 um Kernels (10kg)	20-Aug-08	08-Sep-08	14.0d	FL80214	FL80249	116.0d																
FL80220	AGR-2 Fuel Spec	01-Oct-07	30-Apr-08	153.0d		FL80230	111.0d																

█ Remaining Level of Effort
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Idaho National Laboratory

**NGNP INTEGRATED SCHEDULE
DEVELOPMENT PLAN**

Identifier: PLN-2924
Revision: 1
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NGNP INTEGRATED PLANNING SCHEDULE

9-29-2008

Activity ID	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	2023
FL80225	UCO 425 um Coating Development and Qualification Tests	01-Oct-07	15-Aug-08	230.0d		FL80230, FL80249	34.0d																
FL80230	Fab UCO 425 um Particles (baseline, variant)	18-Aug-08	29-Aug-08	10.0d	FL80220, FL80225, FL80210, FL80212	FL80235, FL80245, FL80249	34.0d																
FL80235	Characterize UCO 425 um particles (baseline)	25-Aug-08	26-Sep-08	25.0d	FL80230	FL80240	3387.0d																
FL80240	Package & Ship UCO Baseline Particles to ORNL	25-Sep-08	30-Sep-08	4.0d	FL80235	FL80285	3387.0d																
FL80245	Characterize UCO 425 um Particles (variant 1)	01-Sep-08	26-Sep-08	20.0d	FL80230	FL80247	79.0d																
FL80247	Package & Ship UCO Variant Particles to...	25-Sep-08	30-Sep-08	4.0d	FL80245	FL80290	79.0d																
FL80249	UCO 500 um Coating Development	01-Sep-08	31-Dec-08	88.0d	FL80225, FL80230, FL80216	FL80251	34.0d																
FL80251	Fab UO2 500 um Particles	02-Jan-09	16-Jan-09	11.0d	FL80249	FL80253	34.0d																
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 Development & Qualification (ORNL)	01-Oct-07	28-Dec-07	65.0d		FL80260	141.0d																
FL80260	500 um Kernel Compact Development & Process Qual (ORNL)	31-Dec-07	26-Sep-08	195.0d	FL80258	FL80305	141.0d																
FL80265	PBMR Particle Characterization	02-Jan-09	21-Jan-09	14.0d		FL80270	44.0d																
FL80270	Compact Fabrication of PBMR Compacts (ORNL)	22-Jan-09	06-May-09	75.0d	FL80265	FL80275	44.0d																
FL80275	Complete Data Package of PBMR Compacts (ORNL)	07-May-09	15-May-09	7.0d	FL80270	FL80280	44.0d																
FL80280	PBMR Data Package Complete	01-Oct-08	15-May-09	0.0d	FL80275	FL80320, FL80317	44.0d																
FL80285	Fab & Characterize UCO Baseline Compacts (ORNL)	01-Oct-08	18-Feb-09	101.0d	FL80240	FL80295	3387.0d																
FL80290	Fab & Characterize UCO Variant 1 Compacts (ORNL)	17-Dec-08	25-Mar-09	71.0d	FL80247	FL80305	24.0d																
FL80295	Complete UCO Compact Data Packages (ORNL)	19-Feb-09	05-Mar-09	11.0d	FL80285	FL80300	3387.0d																
FL80300	UCO Compact Data Packages Complete	05-Mar-09	05-Mar-09	0.0d	FL80295	FL80317	3387.0d																
FL80305	Fab & Characterize UO2 Compacts (ORNL)	11-Mar-09	29-May-09	58.0d	FL80260, FL80255, FL80290	FL80310, FL80320	24.0d																
FL80310	Complete UO2 Data Package	01-Jun-09	12-Jun-09	10.0d	FL80305	FL80315	24.0d																
FL80315	UO2 Data Package Complete	12-Jun-09	12-Jun-09	0.0d	FL80310	FL80320, FL80317	24.0d																
FL80317	AGR-2 Fuel Compact Data Package Complete	12-Jun-09	12-Jun-09	0.0d	FL80315, FL80300, FL80280	FL80855	3316.0d																
FL80320	Package and Ship AGR-2 Compacts (ORNL)	15-Jun-09	26-Jun-09	10.0d	FL80305, FL80315, FL80280	FL80340	24.0d																
C.Q.10.50.10.02.02 Design & Assembly		05-May-08	30-Oct-09	363.0d			24.0d																
FL80325	Experiment Design	05-May-08	30-Jan-09	195.0d		FL80330	24.0d																
FL80330	Design Review Comments	30-Jan-09	30-Jan-09	0.0d	FL80325	FL80335	24.0d																
FL80335	Fabricate Test Train Components	02-Feb-09	26-Jun-09	105.0d	FL80330	FL80340	24.0d																
FL80340	Assemble Test Train	29-Jun-09	30-Oct-09	90.0d	FL80335, FL80320	FL80345	24.0d																
FL80345	AGR-2 Ready To Insert	30-Oct-09	30-Oct-09	0.0d	FL80340	FL80350, FL80855	24.0d																
C.Q.10.50.10.02.03 Irradiation		02-Nov-09	27-Apr-12	650.0d			24.0d																
FL80350	AGR-2 Irradiation (West B)	02-Nov-09	27-Apr-12	650.0d	FL80345, FL80120	FL80360, FL80365, FL80972	24.0d																
FL80355	AGR-2 Data Analysis	02-Nov-09	27-Apr-12	650.0d	FL80350	FL80360	24.0d																
FL80360	AGR-2 Irradiation Complete	27-Apr-12	27-Apr-12	0.0d	FL80350, FL80355	FL80365, FL80922, FL80892, FM310, FL80480, LR270	24.0d																
C.Q.10.50.10.02.04 PIE & Safety Testing		30-Apr-12	04-Sep-15	875.0d			2507.0d																

█ Remaining Level of Effort
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 □ Start Constraint

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Activity ID	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	2023
FLS0365	AGR-2 Cool-down	30-Apr-12	02-Nov-12	135.0d	FLS0360	FLS0370, FLS0375	434.0d																
FLS0370	AGR-2 PIE Planning	30-Apr-12	02-Nov-12	135.0d	FLS0365	FLS0375	434.0d																
FLS0375	AGR-2 Test Train Receipt & Inspection	05-Nov-12	30-Nov-12	20.0d	FLS0365, FLS0370	FLS0380	434.0d																
FLS0380	AGR-2 Capsule Disassembly & Inspection	03-Dec-12	12-Jul-13	160.0d	FLS0375	FLS0385, FLS0395, FLS0392	434.0d																
FLS0385	AGR-2 Safety Testing	28-Jan-13	12-Jun-15	620.0d	FLS0380	FLS0390, FLS0410	434.0d																
FLS0390	AGR-2 Fuel Characterization	28-Jan-13	04-Oct-13	180.0d	FLS0385	FLS0410	874.0d																
FLS0395	AGR-2 ORNL Receipt Inspection	25-Mar-13	19-Apr-13	20.0d	FLS0380	FLS0400, FLS0410	834.0d																
FLS0400	AGR-2 ORNL Safety Testing	22-Apr-13	29-Nov-13	160.0d	FLS0395	FLS0405, FLS0410	834.0d																
FLS0405	AGR-2 ORNL Fuel Characterization	20-May-13	29-Nov-13	140.0d	FLS0400		2967.0d																
FLS0410	AGR-2 Prepare Reports	15-Jun-15	04-Sep-15	60.0d	FLS0400, FLS0395, FLS0390, FLS0385	FLS0415	434.0d																
FLS0415	AGR-2 PIE Complete	04-Sep-15	04-Sep-15	0.0d	FLS0410	FLS0940, LR320	434.0d																
C.Q.10.50.10.03	AGR-3/4 Irradiation Fission Product Transp...	01-Oct-07	29-Jun-15	1993.0d			1741.0d																
C.Q.10.50.10.03.01	Fuel Fabrication	01-Oct-07	14-Jul-09	440.0d			3294.0d																
FLS0425	Fabricate Kernels (350 um fuel)	01-Oct-07	01-Oct-07	0.0d		FLS0430	358.0d																
FLS0430	Fabricate/Characterize Particles (driver fu...)	01-Oct-07	01-Oct-07	0.0d	FLS0425	FLS0435	358.0d																
FLS0435	Fabricate/Characterize DTF Particles (O...	15-Apr-08*	30-Oct-08	143.0d	FLS0430	FLS0440	217.0d																
FLS0440	AGR-3/4 Compact Process Development	31-Oct-08	31-Mar-09	108.0d	FLS0435	FLS0445	217.0d																
FLS0445	Fabricate/Characterize Compacts (ORNL)	01-Apr-09	30-Jun-09	65.0d	FLS0440	FLS0450, FLS0447	217.0d																
FLS0447	AGR-3/4 Fuel Compact Data Package Complete	01-Apr-09	30-Jun-09	0.0d	FLS0445	FLS0862	3304.0d																
FLS0450	Ship Compacts to INL	01-Jul-09	14-Jul-09	10.0d	FLS0445	FLS0470	217.0d																
C.Q.10.50.10.03.02	Design & Assembly	02-Mar-09	13-Aug-10	380.0d			34.0d																
FLS0455	AGR-3/4 Design	02-Mar-09*	29-Jan-10	240.0d		FLS0460, FLS0575	34.0d																
FLS0460	AGR-3/4 Design Complete	29-Jan-10	29-Jan-10	0.0d	FLS0455	FLS0465	34.0d																
FLS0465	AGR-3/4 Fabrication of Test Train Components	01-Feb-10	16-Jul-10	120.0d	FLS0460	FLS0470	34.0d																
FLS0470	AGR-3/4 Test Train Assembly	29-Mar-10	13-Aug-10	100.0d	FLS0465, FLS0460	FLS0475	34.0d																
FLS0475	AGR-3/4 Ready To Insert	13-Aug-10	13-Aug-10	0.0d	FLS0470	FLS0480, FLS0862, FLS0481	34.0d																
C.Q.10.50.10.03.03	Irradiation	30-Aug-10	26-Mar-12	410.0d			24.0d																
FLS0480	AGR 3 Irradiation (NEFT)	30-Aug-10	26-Mar-12	410.0d	FLS0475, FLS0360	FLS0490, FLS0485, FLS1000, FLS0481	24.0d																
FLS0481	AGR 4 Irradiation (NEFT)	15-Aug-11	26-Mar-12	160.0d	FLS0475, FLS0480	FLS0490, FLS1000	24.0d																
FLS0485	AGR-3/4 Data Analysis	30-Aug-10	26-Mar-12	410.0d	FLS0480	FLS0490	24.0d																
FLS0490	AGR-3/4 Irradiation Complete	30-Aug-10	26-Mar-12	0.0d	FLS0480, FLS0485, FLS0481	FLS0495, FLS0595, FLS0900	24.0d																
C.Q.10.50.10.03.04	PIE & Safety Testing	25-Mar-12	29-Jun-15	850.0d			1444.0d																
FLS0495	AGR-3/4 Cool-down	25-Mar-12	24-Sep-12	130.0d	FLS0490	FLS0500, FLS0505	454.0d																
FLS0500	AGR-3/4 PIE Planning	25-Mar-12	24-Sep-12	130.0d	FLS0495	FLS0505	454.0d																
FLS0505	AGR-3/4 Test Train Receipt & Inspection	24-Sep-12	22-Oct-12	20.0d	FLS0495, FLS0500	FLS0510	454.0d																
FLS0510	AGR-3/4 Capsule Disassembly & Inspection	22-Oct-12	06-May-13	140.0d	FLS0505	FLS0515, FLS0525, FLS0500	454.0d																
FLS0515	AGR-3/4 Safety Testing	17-Dec-12	04-May-15	620.0d	FLS0510	FLS0520, FLS0540, FLS1040	454.0d																
FLS0520	AGR-3/4 Fuel Characterization	17-Dec-12	26-Aug-13	180.0d	FLS0515	FLS0540, FLS1005	894.0d																
FLS0525	AGR-3/4 ORNL Receipt Inspection	11-Feb-13	11-Mar-13	20.0d	FLS0510	FLS0530, FLS0540	854.0d																
FLS0530	AGR-3/4 ORNL Safety Testing	11-Mar-13	21-Oct-13	160.0d	FLS0525	FLS0535, FLS0540, FLS1015, FLS1050	854.0d																
FLS0535	AGR-3/4 ORNL Fuel Characterization	08-Apr-13	21-Oct-13	140.0d	FLS0530	FLS1030	1884.0d																
FLS0540	AGR-3/4 Prepare Reports	04-May-15	29-Jun-15	40.0d	FLS0530, FLS0525, FLS0520, FLS0515	FLS0545	454.0d																

■ Remaining Level of Effort
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NGNP INTEGRATED SCHEDULE
DEVELOPMENT PLAN

Identifier: PLN-2924
Revision: 1
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9-29-2008

Activity ID	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	2023
FL00545	AGR-3/4 PIE Complete		29-Jun-15	0.0d	FL00540, FL01540, FL01570, FL01595	FL00980, FL00940, PE175, LR320	454.0d																
C.Q.10.50.10.04	AGR-5/6 Irradiation Fuel Qualification	17-Aug-09	20-Feb-17	1960.0d			1506.0d																
C.Q.10.50.10.04.01	Fuel Fabrication	17-Aug-09	23-Nov-10	331.0d			294.0d																
FL00590	Develop AGR-5/6 Fuel Spec (from AGR-1 data)	17-Aug-09	09-Nov-09	80.0d	FL00117	FL00555	283.0d																
FL00555	Fabricate/Characterize Kernels (5,6,7,8)	09-Nov-09	01-Feb-10	80.0d	FL00550	FL00560	283.0d																
FL00560	Fabricate/Characterize Particles (5,6,7,8)	01-Feb-10	16-Aug-10	140.0d	FL00555	FL00565	283.0d																
FL00565	Fabricate/Characterize AGR-5/6 Compacts	16-Aug-10	09-Nov-10	81.0d	FL00560	FL00570, FL00567	283.0d																
FL00567	AGR-5/6 Fuel Compact Data Package Complete		09-Nov-10	0.0d	FL00565	FL00670	2950.0d																
FL00570	Ship Compacts to INL	09-Nov-10	23-Nov-10	10.0d	FL00565	FL00585	283.0d																
C.Q.10.50.10.04.02	Design & Assembly	01-Feb-10	09-Sep-11	420.0d			164.0d																
FL00575	AGR-5/6 Experiment Design	01-Feb-10	30-Jul-10	130.0d	FL00455	FL00580, FL00680	164.0d																
FL00580	Fabricate AGR-5/6 Components	02-Aug-10	06-May-11	200.0d	FL00575	FL00585, FL00670	164.0d																
FL00585	AGR-5/6 Test Train Assembly	09-May-11	09-Sep-11	90.0d	FL00580, FL00570	FL00590	164.0d																
FL00590	AGR-5/6 Ready To Insert		09-Sep-11	0.0d	FL00585	FL00595, FL00670	164.0d																
C.Q.10.50.10.04.03	Irradiation	26-Mar-12	21-Oct-13	410.0d			24.0d																
FL00595	AGR-5/6 Irradiation (NEFT)	26-Mar-12	21-Oct-13	410.0d	FL00490, FL00590	FL00605, FL00600, FL01075	24.0d																
FL00600	AGR-5/6 Data Analysis	26-Mar-12	21-Oct-13	410.0d	FL00595	FL00605	24.0d																
FL00605	AGR-5/6 Irradiation Complete		21-Oct-13	0.0d	FL00595, FL00600	FL00615, FL00705, FL00908, FL00706	24.0d																
C.Q.10.50.10.04.04	PIE & Safety Testing	21-Oct-13	20-Feb-17	870.0d			1506.0d																
FL00615	AGR-5/6 Cool-down	21-Oct-13	21-Apr-14	130.0d	FL00605	FL00620, FL00625	24.0d																
FL00620	AGR-5/6 PIE Planning	21-Oct-13	21-Apr-14	130.0d	FL00615	FL00625	24.0d																
FL00625	AGR-5/6 Test Train Receipt & Inspection	21-Apr-14	19-May-14	20.0d	FL00615, FL00620	FL00630	24.0d																
FL00630	AGR-5/6 Capsule Disassembly & Inspection	19-May-14	01-Dec-14	140.0d	FL00625	FL00635, FL00645, FL00908	24.0d																
FL00635	AGR-5/6 Safety Testing	14-Jul-14	28-Nov-16	620.0d	FL00630	FL00640, FL00660, FL01115	24.0d																
FL00640	AGR-5/6 Fuel Characterization	14-Jul-14	23-Mar-15	180.0d	FL00635	FL00650, FL01080	464.0d																
FL00645	AGR-5/6 ORNL Receipt Inspection	08-Sep-14	06-Oct-14	20.0d	FL00630	FL00650, FL00660	424.0d																
FL00650	AGR-5/6 ORNL Safety Testing	06-Oct-14	18-May-15	160.0d	FL00645	FL00655, FL00660, FL01090	424.0d																
FL00655	AGR-5/6 ORNL Fuel Characterization	03-Nov-14	18-May-15	140.0d	FL00650	FL01105	1966.0d																
FL00660	AGR-5/6 Prepare Reports	28-Nov-16	20-Feb-17	80.0d	FL00650, FL00645, FL00640, FL00635	FL00665	24.0d																
FL00665	AGR-5/6 PIE Complete		20-Feb-17	0.0d	FL00660	FL00940, PM440, LR320	24.0d																
C.Q.10.50.10.04.05	ATR CIC	01-Oct-13	31-Mar-14	130.0d			1000.0d																
FL00610	ATR CIC	01-Oct-13*	31-Mar-14	130.0d	FL00700	FL00705, FL00706	1000.0d																
C.Q.10.50.10.05	AGR-7/8 Irradiation Fuel Performance and ...	02-Aug-10	28-Jan-19	2216.0d			1621.0d																
C.Q.10.50.10.05.01	Fuel Fabrication	02-Aug-10	08-Nov-10	71.0d			2950.0d																
FL00670	Fabricate/Characterize AGR-7/8 Compacts	02-Aug-10	25-Oct-10	81.0d	FL00580	FL00675, FL00672	1665.0d																
FL00672	AGR-7/8 Fuel Compact Data Package Complete		25-Oct-10	0.0d	FL00670	FL00678	2960.0d																
FL00675	Ship Compacts to INL	26-Oct-10	08-Nov-10	10.0d	FL00670	FL00695	1665.0d																
C.Q.10.50.10.05.02	Design & Assembly	02-Aug-10	09-Mar-12	420.0d			1406.0d																
FL00680	AGR-7/8 Experiment Design	02-Aug-10	28-Jan-11	130.0d	FL00575	FL00685	1406.0d																
FL00685	AGR-7/8 Design Complete		28-Jan-11	0.0d	FL00680	FL00690	1406.0d																
FL00690	AGR-7/8 Fabricate Test Train components	31-Jan-11	04-Nov-11	200.0d	FL00685	FL00695	1406.0d																
FL00695	AGR-7/8 Test Train Assembly	07-Nov-11	09-Mar-12	90.0d	FL00690, FL00675	FL00700	1406.0d																

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FLS0700	AGR-7/8 Ready To Insert	09-Mar-12		0.0d	FLS0695	FLS0705, FLS0678, FLS0610, FLS0706	1406.0d																
C.Q.10.50.10.05.03 Irradiation		01-Apr-14	31-Aug-16	632.0d			1178.0d																
FLS0705	AGR 7 Irradiation (W or S B)	01-Apr-14	26-Oct-15	410.0d	FLS0700, FLS0605, FLS0610	FLS0710, FLS0715, FLS0720	1000.0d																
FLS0706	AGR 8 Irradiation (NEFT)	01-Apr-14	31-Aug-16	632.0d	FLS0700, FLS0605, FLS0610	FLS0710, FLS0715, FLS0721	1178.0d																
FLS0710	AGR-7/8 Data Analysis	01-Apr-14	26-Oct-15	410.0d	FLS0705, FLS0706	FLS0715	1400.0d																
FLS0715	AGR-7/8 Irradiation Complete		31-Aug-16	0.0d	FLS0705, FLS0710, FLS0706	FLS0915, FC130, FLS0721	1178.0d																
C.Q.10.50.10.05.04 PIE & Safety Testing		27-Oct-15	28-Jan-19	850.0d			1621.0d																
FLS0720	AGR 7 Cool-down	27-Oct-15	25-Apr-16	130.0d	FLS0705	FLS0725, FLS0730	1000.0d																
FLS0721	AGR 8 Cool-down	01-Sep-16	01-Mar-17	130.0d	FLS0715, FLS0706	FLS0731	1178.0d																
FLS0725	AGR-7/8 PIE Planning	27-Oct-15	25-Apr-16	130.0d	FLS0720	FLS0730, FLS0731	1000.0d																
FLS0730	AGR 7 Test Train Receipt & Inspection	26-Apr-16	23-May-16	20.0d	FLS0720, FLS0725	FLS0735	1000.0d																
FLS0731	AGR 8 Test Train Receipt & Inspection	02-Mar-17	29-Mar-17	20.0d	FLS0725, FLS0721	FLS0736	1178.0d																
FLS0735	AGR 7 Capsule Disassembly & Inspection	24-May-16	05-Dec-16	140.0d	FLS0730	FLS0740, FLS0750, FLS0915	1000.0d																
FLS0736	AGR 8 Capsule Disassembly & Inspection	30-Mar-17	11-Oct-17	140.0d	FLS0731	FLS0750, FLS0915, FLS0740	1178.0d																
FLS0740	AGR-7/8 Safety Testing	19-Jul-16	03-Dec-18	620.0d	FLS0735, FLS0736	FLS0745, FLS0765	1000.0d																
FLS0745	AGR-7/8 Fuel Characterization	19-Jul-16	27-Mar-17	180.0d	FLS0740	FLS0755, FLS0940	1229.0d																
FLS0750	AGR-7/8 ORNL Receipt Inspection	20-Jul-17	16-Aug-17	20.0d	FLS0735, FLS0736	FLS0755, FLS0765	1178.0d																
FLS0755	AGR-7/8 ORNL Safety Testing	17-Aug-17	28-Mar-18	160.0d	FLS0750	FLS0760, FLS0765	1178.0d																
FLS0760	AGR-7/8 ORNL Fuel Characterization	14-Sep-17	28-Mar-18	140.0d	FLS0755		1839.0d																
FLS0765	AGR-7/8 Prepare Reports	04-Dec-18	28-Jan-19	40.0d	FLS0755, FLS0750, FLS0745, FLS0740	FLS0770	1000.0d																
FLS0770	AGR-7/8 PIE Complete		28-Jan-19	0.0d	FLS0765	FLS0940	1000.0d																
C.Q.10.50.10.05.05 Fuel Performance Modeling		01-Oct-07	19-Aug-22	3858.0d			692.0d																
C.Q.10.50.10.05.01 Accident Benchmark		02-Mar-09	29-Jan-10	240.0d			1112.0d																
FLS0838	Develop Accident Condition Models	02-Mar-09	22-May-09	60.0d		FLS0840	1112.0d																
FLS0840	Calculate Accident Condition Benchmark Cases	25-May-09	14-Aug-09	60.0d	FLS0838	FLS0842	1112.0d																
FLS0842	Issue Accident Condition Benchmark Rep...	17-Aug-09	06-Nov-09	60.0d	FLS0840	FLS0845	1112.0d																
FLS0845	NRC Topical Report on Fuel Performance	09-Nov-09	29-Jan-10	60.0d	FLS0842	FLS0840, FM310	1112.0d																
C.Q.10.50.10.05.02 PyC Modeling		01-Oct-07	31-Jul-09	453.0d			3281.0d																
FLS0848	Review PyC Measurement UNERI Report	01-Oct-07	29-Aug-08	240.0d		FLS0850	3281.0d																
FLS0850	Update PyC Models as Needed	01-Sep-08	31-Jul-09	240.0d	FLS0848	FLS0852	3281.0d																
FLS0852	Issue PyC Model Status Report as Needed		31-Jul-09	0.0d	FLS0850	FLS0855, FLS0862, FLS0870, FLS0878, FLS0885, FLS0892, FLS0900, FLS0908, FLS0915	3281.0d																
C.Q.10.50.10.05.03 Irradiation Pre-Test Predictions		02-Nov-09	16-Nov-12	795.0d			2601.0d																
FLS0855	Update PARFUME Models as Needed AGR-2	02-Nov-09	22-Jan-10	60.0d	FLS0852, FLS0317, FLS0345	FLS0858	3216.0d																
FLS0858	Calculate AGR-2 Irradiation Pre-test Predictions	25-Jan-10	16-Apr-10	60.0d	FLS0855	FLS0860	3216.0d																
FLS0860	Issue AGR-2 Pre-test Prediction Report	19-Apr-10	09-Jul-10	60.0d	FLS0858	FLS0928	3216.0d																
FLS0862	Update PARFUME Models as Needed for AGR-3/4	16-Aug-10	05-Nov-10	60.0d	FLS0852, FLS0447, FLS0475	FLS0865	3011.0d																
FLS0865	Calculate AGR-3/4 Irradiation Pre-test Predictions	08-Nov-10	28-Jan-11	60.0d	FLS0862	FLS0868, FLS0875, FLS0882	3011.0d																
FLS0868	Issue AGR-3/4 Pre-test Prediction Report	31-Jan-11	22-Apr-11	60.0d	FLS0865	FLS0928	3011.0d																

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FLS0870	Update PARFUME Models as Needed for AGR-5/6	12-Sep-11	02-Dec-11	60.00	FLS0852, FLS0567, FLS0590	FLS0872	2731.00																
FLS0872	Calculate AGR-5/6 Irradiation Pre-test Predictions	05-Dec-11	24-Feb-12	60.00	FLS0870	FLS0875	2731.00																
FLS0875	Issue AGR-5/6 Pre-test Prediction Report	27-Feb-12	18-May-12	60.00	FLS0865, FLS0872	FLS0928	2731.00																
FLS0878	Update PARFUME Models as Needed for AGR-5/6	12-Mar-12	01-Jun-12	60.00	FLS0852, FLS0672, FLS0700	FLS0880	2601.00																
FLS0880	Calculate AGR-5/6 Irradiation Pre-test Predictions	04-Jun-12	24-Aug-12	60.00	FLS0878	FLS0882	2601.00																
FLS0882	Issue AGR-5/6 Pre-test Prediction Report	27-Aug-12	16-Nov-12	60.00	FLS0865, FLS0880	FLS0928	2601.00																
C.Q.10.50.10.06.04	Safety Test Predictions	30-Mar-10	06-Dec-17	2007.00			1283.00																
FLS0885	Update PARFUME Models as Needed for AGR-1 Safety Tests	30-Mar-10	22-Jun-10	60.00	FLS0120, FLS0160, FLS0852	FLS0888	3110.00																
FLS0888	Calculate AGR-1 Safety Predictions	22-Jun-10	14-Sep-10	60.00	FLS0885	FLS0890	3110.00																
FLS0890	Issue AGR-1 Safety Test Prediction Report	14-Sep-10	07-Dec-10	60.00	FLS0888	FLS0928	3110.00																
FLS0892	Update PARFUME Models as Needed for AGR-2 Safety Tests	03-Dec-12	22-Feb-13	60.00	FLS0360, FLS0380, FLS0852	FLS0895	2411.00																
FLS0895	Calculate AGR-2 Safety Predictions	25-Feb-13	17-May-13	60.00	FLS0892	FLS0898	2411.00																
FLS0898	Issue AGR-2 Safety Test Prediction Report	20-May-13	09-Aug-13	60.00	FLS0895	FLS0928	2411.00																
FLS0900	Update PARFUME Models as Needed for AGR-3/4 Safety Tests	22-Oct-12	14-Jan-13	60.00	FLS0490, FLS0510, FLS0852	FLS0902	2441.00																
FLS0902	Calculate AGR-3/4 Safety Predictions	14-Jan-13	09-Apr-13	60.00	FLS0900	FLS0905	2441.00																
FLS0905	Issue AGR-3/4 Safety Test Report	09-Apr-13	01-Jul-13	60.00	FLS0902	FLS0928	2441.00																
FLS0908	Update PARFUME Models as Needed for AGR-5/6 Safety Tests	19-May-14	11-Aug-14	60.00	FLS0605, FLS0630, FLS0852	FLS0910	2031.00																
FLS0910	Calculate AGR-5/6 Safety Predictions	11-Aug-14	03-Nov-14	60.00	FLS0908	FLS0912	2031.00																
FLS0912	Issue AGR-5/6 Safety Test Report	03-Nov-14	26-Jan-15	60.00	FLS0910	FLS0928	2031.00																
FLS0915	Update PARFUME Models as Needed for AGR-7/8 Safety Tests	30-Mar-17	21-Jun-17	60.00	FLS0715, FLS0735, FLS0852, FLS0875, FLS0736	FLS0918	1283.00																
FLS0918	Calculate AGR-7/8 Safety Predictions	22-Jun-17	13-Sep-17	60.00	FLS0915	FLS0920	1283.00																
FLS0920	Issue AGR-7/8 Safety Test Report	14-Sep-17	06-Dec-17	60.00	FLS0918	FLS0928	1283.00																
FLS0922	Preliminary NRC Topical on Fuel Perform...	23-Apr-13	23-Apr-13	0.00	FLS0190, FLS0360	LR270, FLS0940	271.00																
C.Q.10.50.10.06.05	Verification & Validation	29-Dec-14	19-Aug-22	1995.00			692.00																
FLS0925	Plan Code V&V Activities	29-Dec-14	13-Dec-17	773.00	FLS0928		1914.00																
FLS0928	Calculate V&V Cases	07-Dec-17	13-Dec-17	5.00	FLS0968, FLS0955, FLS0920, FLS0912, FLS0905, FLS0898, FLS0890, FLS0882, FLS0875, FLS0868, FLS0860	FLS0930, FLS0925	1283.00																
FLS0930	Draft V&V Report	14-Dec-17	20-Dec-17	5.00	FLS0928	FLS0932, FLS0935	1283.00																
FLS0932	Incorporate/Resolve Comments for V&V Report	21-Dec-17	27-Dec-17	5.00	FLS0930		1904.00																
FLS0935	Issue V&V Report	21-Dec-17	27-Dec-17	5.00	FLS0930	FLS0938, FLS0940	1283.00																
FLS0938	Fuel Performance Model Validated	27-Dec-17	27-Dec-17	0.00	FLS0935		1904.00																

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FL00940	Final NRC Topical Report for Fuel Performance	20-Aug-21	19-Aug-22	261.0d	FL00745, FL00935, FL00415, FL00545, FL00665, FL00770, FL00845, FL00922, FL00980, FL01000, FL01010, FL01025, FL01035, FL01045, FL01070, FL01085, FL01100, FL01110, FL01120, FL01160, FL01195, FL01365, FL01395, FL01435, FL01450, FL01470, FL01500, FL01520, FL01075, LR360	PMS01, LR360	332.0d																
C.Q.10.50.10.06.06	Manuals	01-Oct-08	03-Aug-10	465.0d			3199.0d																
FL00945	Draft Theory Manual	01-Oct-08	17-Mar-09	120.0d		FL00948	3199.0d																
FL00948	Incorporate/Resolve Comments	18-Mar-09	12-May-09	40.0d	FL00945	FL00950	3199.0d																
FL00950	Issue Theory Manual	13-May-09	09-Jun-09	20.0d	FL00948	FL00952	3199.0d																
FL00952	Update Theory Manual (as needed)	10-Jun-09	01-Sep-09	60.0d	FL00950	FL00955	3199.0d																
FL00955	Issue Finalized Theory Manual	01-Sep-09	01-Sep-09	0.0d	FL00952	FL00958	3199.0d																
FL00958	Draft Users Manual	02-Sep-09	16-Feb-10	120.0d	FL00955	FL00960	3199.0d																
FL00960	Incorporate/Resolve Comments	17-Feb-10	13-Apr-10	40.0d	FL00958	FL00962	3199.0d																
FL00962	Issue Users Manual	14-Apr-10	11-May-10	20.0d	FL00960	FL00965	3199.0d																
FL00965	Update Users Manual (as needed)	12-May-10	03-Aug-10	60.0d	FL00962	FL00968	3199.0d																
FL00968	Issue Finalized Users Manual	03-Aug-10	03-Aug-10	0.0d	FL00965	FL00928	3199.0d																
C.Q.10.50.10.06.07	Property Measurement	01-Oct-07	01-May-15	1953.0d			1781.0d																
FL00970	Un-irradiated Property Measurements	01-Oct-07	06-Nov-09	550.0d		FL00972	1781.0d																
FL00972	Irradiation of Samples	09-Nov-09	04-May-12	650.0d	FL00970, FL00360	FL00975	1781.0d																
FL00975	Irradiated Property Measurements	07-May-12	01-May-15	790.0d	FL00972	FL00915	1781.0d																
C.Q.10.50.10.06.08	GIF VHTR Bench marking	01-Oct-08	30-Sep-14	1550.0d			2750.0d																
FL00978	GIF VHTR Bench marking	01-Oct-08	30-Sep-14	1555.0d			2750.0d																
C.Q.10.50.10.07	Fission Product Transport & Source Term	01-Jul-08	02-Jul-18	2596.0d			1772.0d																
C.Q.10.50.10.07.01	FPT & Source Term Planning			0.0d			0.0d																
C.Q.10.50.10.07.02	AGR-3/4 Fission Product Transport & Source Term	15-Aug-11	02-Jul-18	1795.0d			1151.0d																
FL00980	Initiate Preliminary NRC Topical Report for NGNP Fission Product Transport	29-Jun-15	02-Jul-18	795.0d	FL00545	FL00940	1151.0d																
C.Q.10.50.10.07.02.01	Measure Fission Gas Release AGR-3/4	15-Aug-11	24-Mar-14	680.0d			2266.0d																
FL01000	Irradiation/online Gas Release AGR-3/4	15-Aug-11	11-Mar-13	410.0d	FL00480, FL00481	FL00940	2636.0d																
FL01005	Measure Iodine/Tellurium Release AGR-3/4	25-Aug-11	25-Nov-13	65.0d	FL00520	FL01010	2266.0d																
FL01010	Report Results/Upgrade Models AGR-3/4	25-Nov-13	24-Mar-14	85.0d	FL01005	FL00940	2266.0d																
C.Q.10.50.10.07.02.02	Measure Fission Gas Under COCD AGR-3/4	11-Mar-13	12-Aug-15	632.0d			1904.0d																
FL01015	Reactivate Test Specimens AGR-3/4	11-Mar-13	10-May-13	44.0d	FL00530	FL01020	1904.0d																
FL01020	Measure Gas and Iodine AGR-3/4	10-May-13	13-Mar-15	480.0d	FL01015	FL01025	1904.0d																
FL01025	Report Results/Upgrade Models AGR-3/4	13-Mar-15	12-Aug-15	108.0d	FL01020	FL00940	1904.0d																
C.Q.10.50.10.07.02.03	Measure Fission Metal Release AGR-3/4	09-Apr-13	09-Sep-15	632.0d			1884.0d																
FL01030	Measure Fission Metal Release AGR-3/4	09-Apr-13	13-Apr-15	525.0d	FL00535	FL01035	1884.0d																
FL01035	Report Results/Upgrade Models AGR-3/4	13-Apr-15	09-Sep-15	107.0d	FL01030	FL00940	1884.0d																
C.Q.10.50.10.07.02.04	Measure Model Fission Metal Release AGR-3/4	04-May-15	14-Feb-18	727.0d			1249.0d																
FL01040	Measure Fission Metal Release AGR-3/4	04-May-15	18-Sep-17	620.0d	FL00515	FL01045	1249.0d																
FL01045	Report Results/Upgrade Models AGR-3/4	18-Sep-17	14-Feb-18	107.0d	FL01040	FL00940	1249.0d																
C.Q.10.50.10.07.02.05	Measure Diffusivities of Ag Cs AGR-3/4	11-Mar-13	12-Aug-15	632.0d			1792.0d																
FL01050	Measure Fission Product Diffusivities AGR-3/4	11-Mar-13	16-Mar-15	525.0d	FL00530	FL01055	1792.0d																

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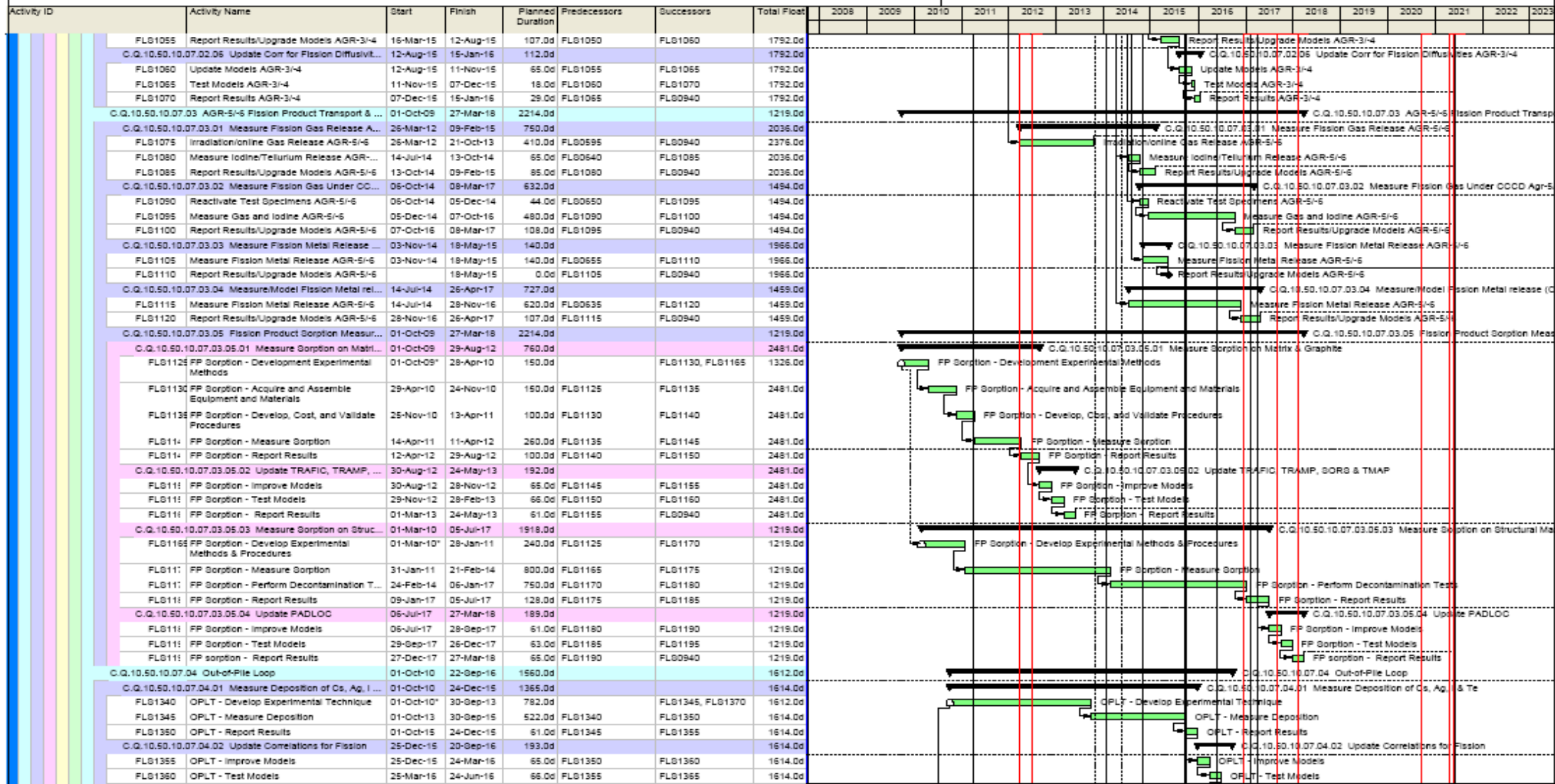
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FL01365	OPLT - Report Results	27-Jun-16	20-Sep-16	62.0d	FL01360	FL00940	1614.0d																
C.Q.10.50.10.07.04.03	Measure Re-entrainment of Rad...	01-Oct-10	28-Dec-15	1367.0d			1612.0d																
FL01370	OPLT - Develop Experimental Technique	01-Oct-10	30-Sep-13	782.0d	FL01340	FL01375	1612.0d																
FL01375	OPLT - Measure Deposition	01-Oct-13	30-Sep-15	522.0d	FL01370	FL01380	1612.0d																
FL01380	OPLT - Report Results	01-Oct-15	28-Dec-15	63.0d	FL01375	FL01385	1612.0d																
C.Q.10.50.10.07.04.04	Improve Re-entrainment Model L...	29-Dec-15	22-Sep-16	193.0d			1612.0d																
FL01385	OPLT - Improve Models	29-Dec-15	28-Mar-16	65.0d	FL01380	FL01390	1612.0d																
FL01390	OPLT - Test Models	29-Mar-16	28-Jun-16	66.0d	FL01385	FL01395	1612.0d																
FL01395	OPLT - Report Results	29-Jun-16	22-Sep-16	62.0d	FL01390	FL00940	1612.0d																
C.Q.10.50.10.07.05	In-Pile Loop	04-Oct-10	16-May-18	1989.0d			1183.0d																
C.Q.10.50.10.07.05.01	Measure Radionuclide Plateout ...	04-Oct-10	01-Nov-17	1848.0d			1183.0d																
FL01400	IPLT - Develop International Collaboration of In-Pile Test	04-Oct-10	01-Oct-13	782.0d		FL01405	1183.0d																
FL01405	IPLT - Specify Test Program and Select Loop	02-Oct-13	01-Oct-14	261.0d	FL01400	FL01410, FL01420, FL01440	1183.0d																
FL01410	IPLT - Conduct In-Pile Tests	02-Oct-14	31-Oct-16	543.0d	FL01405, FL01420	FL01415	1183.0d																
FL01415	IPLT - Analyze and Report Results	01-Nov-16	01-Nov-17	262.0d	FL01410	FL01425	1183.0d																
C.Q.10.50.10.07.05.02	Validate PADLOC Code	04-Jun-14	16-May-18	1031.0d			1183.0d																
FL01420	IPLT - Pre-test Calculations	04-Jun-14	01-Oct-14	86.0d	FL01405	FL01410	1183.0d																
FL01425	IPLT - Post-test Calculations	13-Dec-16	28-Nov-17	251.0d	FL01415	FL01430	1183.0d																
FL01430	IPLT - Compare and Report Results	29-Nov-17	16-May-18	121.0d	FL01425	FL01435	1183.0d																
FL01435	IPLT - PADLOC Code Validated	16-May-18	0.0d	0.0d	FL01430	FL00940	1183.0d																
C.Q.10.50.10.07.05.03	Measure Radionuclide Liffoff Val...	02-Oct-13	01-Nov-17	1066.0d			1213.0d																
FL01440	IPLT - Specify Test Program and Select L...	02-Oct-13	01-Oct-14	261.0d	FL01405	FL01445, FL01455	1213.0d																
FL01445	IPLT - Conduct In-Pile Tests	02-Oct-14	31-Oct-16	543.0d	FL01440, FL01455	FL01450	1213.0d																
FL01450	IPLT - Analyze and Report Results	01-Nov-16	01-Nov-17	262.0d	FL01445	FL00940, FL01460	1213.0d																
C.Q.10.50.10.07.05.04	Validate POLO Codes	04-Jun-14	04-Apr-18	1001.0d			1213.0d																
FL01455	IPLT - Pre-test Calculations	04-Jun-14	01-Oct-14	86.0d	FL01440	FL01445	1213.0d																
FL01460	IPLT - Post-test Calculations	01-Nov-16	17-Oct-17	251.0d	FL01450	FL01465	1213.0d																
FL01465	IPLT - Compare and Report Results	18-Oct-17	04-Apr-18	121.0d	FL01460	FL01470	1213.0d																
FL01470	IPLT - POLO Code Validated	04-Apr-18	0.0d	0.0d	FL01465	FL00940	1213.0d																
C.Q.10.50.10.07.06	Vented Low-Pressure Containment	01-Oct-12	01-Feb-16	871.0d			1780.0d																
C.Q.10.50.10.07.06.01	Develop Analytical Methods for ...	01-Oct-12	01-Feb-16	871.0d			1780.0d																
FL01475	VLPC - Determine Fission Product Forms in VLPC	01-Oct-12	01-Mar-13	110.0d		FL01480	1780.0d																
FL01480	VLPC - Determine Applicability of LWR Analytical	04-Mar-13	13-Jun-13	74.0d	FL01475	FL01485	1780.0d																
FL01485	VLPC - Conduct Small-Scale Testing	14-Jun-13	17-Jun-15	524.0d	FL01480	FL01490	1780.0d																
FL01490	VLPC - Calculate Fission Product in VLPC (CCCC)	18-Jun-15	30-Oct-15	97.0d	FL01485	FL01495	1780.0d																
FL01495	VLPC - Report Results	02-Nov-15	01-Feb-16	66.0d	FL01490	FL01500	1780.0d																
FL01500	VLPC - VLPC Model	01-Feb-16	0.0d	0.0d	FL01495	FL00940	1780.0d																
C.Q.10.50.10.07.06.02	Decontamination Efficiency of Pr...	01-Oct-13	30-Sep-15	522.0d			1868.0d																
FL01505	PRTF - Conduct DF Tests	01-Oct-13	11-Apr-14	139.0d		FL01510	1868.0d																
FL01510	PRTF - Improve Predictive Model	14-Apr-14	12-Dec-14	175.0d	FL01505	FL01515	1868.0d																
FL01515	PRTF - Optimize Filter Design	15-Dec-14	30-Sep-15	208.0d	FL01510	FL01520	1868.0d																
FL01520	PRTF - Report Results	30-Sep-15	0.0d	0.0d	FL01515	FL00940	1868.0d																
C.Q.10.50.10.07.07	Tritium Permeation Studies	01-Jul-08	19-Feb-14	1449.0d			2909.0d																
C.Q.10.50.10.07.07.01	H-3 Release from TRISO Particles	01-Jul-08	19-Feb-14	1449.0d			806.0d																
FL01525	Prepare Test Spec-Tritium Permeation-TRISO Particles	01-Jul-08	14-Sep-11	837.0d		FL01530	806.0d																

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FL01530	Select Measurement Technique-Tritium Permeation-TRISO Particles	15-Sep-11	19-Jan-12	90.0d	FL01525	FL01535	806.0d																
FL01535	Construct/Commission Test Facility-Tritium Permeation-TRISO Particles	19-Jan-12	19-Dec-12	240.0d	FL01530	FL01540	806.0d																
FL01540	Perform H-3 Release Measurements-Tritium Permeation-TRISO Particles	27-Sep-12	19-Feb-14	365.0d	FL01535	FL00545	806.0d																
C.Q.10.50.10.07.07.02	H-3 Sorptivities of Core Graphite	01-Oct-09	07-Nov-12	810.0d			1141.0d																
FL01545	Prepare Test Specs-Tritium Permeation-Sorptives of Core Graphites	01-Oct-09*	03-Feb-10	90.0d		FL01550, FL01555	1141.0d																
FL01550	Select Measurement Technique-Tritium Permeation-Sorptives of Core Graphites	04-Feb-10	09-Jun-10	90.0d	FL01545	FL01555	1141.0d																
FL01555	Construct/Commission Test Facility-Tritium Permeation-Sorptives of Core Graphites	10-Jun-10	13-Oct-10	90.0d	FL01545, FL01550	FL01560	1141.0d																
FL01560	Measurement: Replaceable Graphite-Tritium Permeation-Sorptives of Core Graphites	14-Oct-10	22-Jun-11	180.0d	FL01555	FL01565	1141.0d																
FL01565	Measurement: Permanent Graphite-Tritium Permeation-Sorptives of Core Graphites	23-Jun-11	29-Feb-12	180.0d	FL01560	FL01570	1141.0d																
FL01570	Measurement: Fuel Compact Matrix-Tritium Permeation-Sorptives of Core Graphites	01-Mar-12	07-Nov-12	180.0d	FL01565	FL00545	1141.0d																
C.Q.10.50.10.07.07.03	H-3 Release from B4C Pellets	01-Oct-09	07-Mar-12	635.0d			3419.0d																
FL01575	Prepare Test Specs-Tritium Permeation-B4C Pellets	01-Oct-09*	03-Feb-10	90.0d		FL01580, FL01585, FL01590	1316.0d																
FL01580	Fabricate Test Articles-Tritium Permeation-B4C Pellets	04-Feb-10	13-Oct-10	180.0d	FL01575		3784.0d																
FL01585	Select Measurement Technique-Tritium Permeation-B4C Pellets	04-Feb-10	09-Jun-10	90.0d	FL01575	FL01590	1316.0d																
FL01590	Construct/Commission Test Facility-Tritium Permeation-B4C Pellets	10-Jun-10	13-Oct-10	90.0d	FL01575, FL01585	FL01595	1316.0d																
FL01595	Perform H-3 Release Measurements-Tritium Permeation-B4C Pellets	14-Oct-10	07-Mar-12	365.0d	FL01590	FL00545	1316.0d																
C.Q.10.50.10.07.07.04	H-3 Permeability of HX Metals	01-Oct-09	17-Jul-13	990.0d			741.0d																
FL01600	Prepare Test Specs-Tritium Permeation-Permeability of HX Metals	01-Oct-09*	03-Feb-10	90.0d		FL01605, FL01610	741.0d																
FL01605	Select Measurement Technique-Tritium Permeation-Permeability of HX Metals	04-Feb-10	09-Jun-10	90.0d	FL01600	FL01610	741.0d																
FL01610	Construct/Commission Test Facility-Tritium Permeation-Permeability of HX Metals	10-Jun-10	13-Oct-10	90.0d	FL01600, FL01605	FL01615	741.0d																
FL01615	Measurement: IN 617-Tritium Permeation-Permeability of HX Metals	14-Oct-10	22-Jun-11	180.0d	FL01610	FL01620	741.0d																
FL01620	Measurement: Hastelloy XR-Tritium Permeation-Permeability of HX Metals	23-Jun-11	29-Feb-12	180.0d	FL01615	FL01625	741.0d																
FL01625	Measurement: Alloy 800H-Tritium Permeation-Permeability of HX Metals	01-Mar-12	07-Nov-12	180.0d	FL01620	FL01630	741.0d																
FL01630	Measurement: T22-Tritium Permeation-Permeability of HX Metals	08-Nov-12	17-Jul-13	180.0d	FL01625	HT0510	741.0d																
C.Q.10.50.20	Materials	01-Oct-07	30-Sep-20	3366.0d			1184.0d																
C.Q.10.50.20.01	High Temperature Metals	04-Aug-08	30-Sep-20	3153.0d			1184.0d																
C.Q.10.50.20.01.01	Intermediate Heat Exchanger	04-Aug-08	30-Sep-20	3153.0d			1184.0d																
MAT0285	Procure 617 Heat for Testing	01-Sep-08*	12-Jan-09	96.0d		MAT0295, MAT0340, MAT0315	136.0d																
MAT0290	Procure 800H for Testing	04-Aug-08*	15-Jun-09	226.0d		MAT0325, MAT0330	17.0d																
C.Q.10.50.20.01.01.01	Testing for ASME Cose Case	01-Oct-08	30-Sep-20	3116.0d			1184.0d																
MAT0295	Tensile Test Matrix for Sm Confirmatory Testing	13-Jan-09	30-Sep-10	448.0d	MAT0285	MAT0300, MAT0335	538.0d																
MAT0300	Long Term Alloy 617 Creep Rupture Tests for Qualification	13-Jan-09	30-Sep-20	3057.0d	MAT0295		1184.0d																

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MAT0305	Fatigue Tests to Support Design Cure development in 517 Code Case	04-Jan-10*	28-Sep-12	715.0d		MAT0310, MAT0335	17.0d																
MAT0310	Creep-fatigue Test Matrix to Support Interaction Diagram	04-Jan-10	28-Sep-12	715.0d	MAT0305	MAT0335	17.0d																
MAT0315	Test Matrix to Determine "C" Factor in Multiaxial Creep Rupture Strength Criterion for 517	02-Jun-09	31-Aug-10	326.0d	MAT0285	MAT0335	560.0d																
MAT0320	Test Matrix to Address Creep-fatigue Saturation with Hold Time	01-Oct-08*	29-Sep-09	260.0d		MAT0335	800.0d																
MAT0325	Test Matrix for Strain Rate Effect on Yield and Tensile Strengths for 800H	04-Aug-09	30-Sep-09	42.0d	MAT0280	MAT0335	799.0d																
MAT0330	Test Matrix to Validate "C" Factor in Multiaxial Creep Rupture Strength Criterion for 800H	12-Oct-10	28-Sep-12	514.0d	MAT0280	MAT0335	17.0d																
MAT0335	IXX Data Complete for Code Case Submittal	28-Sep-12		0.0d	MAT0295, MAT0305, MAT0310, MAT0315, MAT0320, MAT0325, MAT0330, MAT0340, MAT0345, MAT0350, MAT0355, MAT0360, MAT0365, MAT0370, MAT0375, MAT0380, MAT0385, MAT0390, MAT0395, MAT0400, MAT0405, MAT0410	SE445	17.0d																
C.Q.10.50.20.01.01.02	Determine Unified Constitutive Model (UCM)	05-Jan-09	31-Aug-12	955.0d			37.0d																
MAT0340	Tensile Test Matrix to Determine Strain Rate Sensitivity	01-Jun-09*	30-Sep-11	610.0d	MAT0285	MAT0345, MAT0335	37.0d																
MAT0345	Torsion Test Matrix for Validating Von Mises Criterion	01-Jun-09	30-Sep-11	610.0d	MAT0340	MAT0350, MAT0335	37.0d																
MAT0350	Stress Dip Test Matrix	01-Jun-09	30-Sep-11	610.0d	MAT0345	MAT0355, MAT0335	37.0d																
MAT0355	Test Matrix for Short-term Creep Test	01-Jun-09	31-Aug-12	850.0d	MAT0350	MAT0360, MAT0335	37.0d																
MAT0360	Test Matrix for Uniaxial Ratcheting Tests	01-Jun-09	30-Sep-11	610.0d	MAT0355	MAT0365, MAT0335	277.0d																
MAT0365	Test Matrix for Torsional Cycling with Constant Axial Strain	01-Jun-09	30-Sep-11	610.0d	MAT0360	MAT0370, MAT0335	277.0d																
MAT0370	Test Matrix for Loading-Unloading-Creep Sequence	01-Jun-09	30-Sep-11	610.0d	MAT0365	MAT0375, MAT0335	277.0d																
MAT0375	Test Matrix for Thermomechanical Cycling	01-Jun-09	30-Sep-11	610.0d	MAT0370	MAT0380, MAT0335	277.0d																
MAT0380	Test matrix for Creep Curves to Qualify UCM	01-Jun-09	30-Sep-11	610.0d	MAT0375	MAT0385, MAT0335	277.0d																
MAT0385	Stress Relaxation Test Matrix for Qualifying UCM	01-Jun-09	30-Sep-11	610.0d	MAT0380	MAT0390, MAT0335	277.0d																
MAT0390	Uniaxial Test on Thermally Aged 517	01-Jun-09	30-Sep-11	610.0d	MAT0385	MAT0400, MAT0335	277.0d																
MAT0395	Creep-Fatigue Test Matrix for SMT Specimens	05-Jan-09*	30-Sep-11	715.0d		MAT0335	277.0d																
MAT0400	Tensile Tests Supporting UCM for Alloy 800H	03-Aug-09	30-Sep-10	304.0d	MAT0390	MAT0335	538.0d																
C.Q.10.50.20.01.01.03	Determine Creep Mechanism	03-Nov-08	31-Dec-09	292.0d			733.0d																
MAT0405	Test Matrix for Interrupted Creep Tests	01-Dec-08	31-Dec-09	284.0d	MAT0410	MAT0335	733.0d																
MAT0410	Test Matrix to Explore Creep Mechanisms of Alloy 517	03-Nov-08*	30-Sep-09	238.0d		MAT0405, MAT0415, MAT0335	733.0d																
MAT0415	Test Matrix to Explore Creep Mechanisms of Alloy 800H	03-Nov-08	30-Sep-09	238.0d	MAT0410	MAT0335	799.0d																

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C.Q.10.50.20.01.01.04	Welding Properties and Procedures	01-Oct-08	30-Sep-11	768.0d			277.0d	C.Q.10.50.20.01.01.04 Welding Properties and Procedures															
MAT0420	Test Matrix to Determine Weld Strength Rupture Factor	01-Oct-08*	27-Feb-09	108.0d		MAT0425, MAT0335	277.0d	Test Matrix to Determine Weld Strength Rupture Factor															
MAT0425	Creep-Fatigue Tests for Alloy 617 Welds	01-Oct-08	30-Sep-11	783.0d	MAT0420	MAT0335	277.0d	Creep-Fatigue Tests for Alloy 617 Welds															
C.Q.10.50.20.01.01.05	Determine Effect of Aging	01-Oct-08	28-Sep-12	1028.0d			17.0d	C.Q.10.50.20.01.01.05 Determine Effect of Aging															
MAT0430	Aging Effects o Fracture Toughness of 617 Wrought Metal	01-Oct-08*	27-Feb-09	108.0d		MAT0435, MAT0445, MAT0335	82.0d	Aging Effects o Fracture Toughness of 617 Wrought Metal															
MAT0435	Aging Effects on Fracture Toughness of GTA Weld from Filler Metal 617	01-Oct-08	27-Feb-09	108.0d	MAT0430	MAT0445, MAT0335	147.0d	Aging Effects on Fracture Toughness of GTA Weld from Filler Metal 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	Aging Effects on Fracture Toughness of SMA Weld from Weld Electrode 117															
MAT0445	Uniaxial Tests on Thermally Aged 617 to Support UCM	01-Jun-09	31-Aug-11	588.0d	MAT0435, MAT0430	MAT0450, MAT0335	82.0d	Uniaxial Tests on Thermally Aged 617 to Support UCM															
MAT0450	Thermal Aging Test Matrix for Strength Reduction Factors	05-Oct-09	29-Jun-12	715.0d	MAT0445	MAT0335	82.0d	Thermal Aging Test Matrix for Strength Reduction Factors															
C.Q.10.50.20.01.01.06	Determine Effect of Grain Size	03-Nov-08	30-Sep-09	226.0d			799.0d	C.Q.10.50.20.01.01.06 Determine Effect of Grain Size															
MAT0455	Test Matrix to Explore Creep Mechanisms of 617	03-Nov-08*	30-Sep-09	238.0d		MAT0460, MAT0335	799.0d	Test Matrix to Explore Creep Mechanisms of 617															
MAT0460	Test Matrix for Determining Grain Size Rupture Factors for 617	03-Nov-08	30-Sep-09	238.0d	MAT0455	MAT0335	799.0d	Test Matrix for Determining Grain Size Rupture Factors for 617															
C.Q.10.50.20.01.01.07	Determine Environmental Effects	01-Oct-08	30-Sep-11	768.0d			277.0d	C.Q.10.50.20.01.01.07 Determine Environmental Effects															
MAT0465	Creep-Fatigue Tests for 617 Welds	01-Oct-08*	30-Sep-11	783.0d		MAT0490, MAT0470, MAT0335	277.0d	Creep-Fatigue Tests for 617 Welds															
MAT0470	Creep-Fatigue Test Matrix for SMT Specimens	14-Jan-09	30-Sep-11	708.0d	MAT0465	MAT0475, MAT0490, MAT0335	277.0d	Creep-Fatigue Test Matrix for SMT Specimens															
MAT0475	Fatigue Tests to Support Design Curve Development in 617 Code Case	14-Jan-09	30-Sep-11	708.0d	MAT0470	MAT0480, MAT0490, MAT0335	277.0d	Fatigue Tests to Support Design Curve Development in 617 Code Case															
MAT0480	Creep-Fatigue Test Matrix to Support Determination of Creep-Fatigue Interaction Diagram	14-Jan-09	30-Sep-11	708.0d	MAT0475	MAT0490, MAT0335	277.0d	Creep-Fatigue Test Matrix to Support Determination of Creep-Fatigue Interaction Diagram															
C.Q.10.50.20.01.01.08	NRC Concerns	01-Oct-08	30-Sep-11	522.0d			677.0d	C.Q.10.50.20.01.01.08 NRC Concerns															
MAT0485	Tube Burst Tests for Alloy 617 and Alloy 800H	01-Oct-09*	30-Sep-11	522.0d		MAT0490	677.0d	Tube Burst Tests for Alloy 617 and Alloy 800H															
MAT0490	IHX Input to NRC Complete		30-Sep-11	0.0d	MAT0485, MAT0485, MAT0470, MAT0475, MAT0490	PM310	677.0d	IHX Input to NRC Complete															
C.Q.10.50.20.01.02	RPV Cooled Vessel Option	01-Oct-08	16-Apr-18	2474.0d			1826.0d	C.Q.10.50.20.01.02 RPV Cooled Vessel Option															
MAT0495	Acquire Heavy Section A 508 Forging	01-Oct-08*	18-Jun-09	180.0d		MAT0500, MAT0505, MAT0525, MAT0550, MAT0520, MAT05...	77.0d	Acquire Heavy Section A 508 Forging															
MAT0500	Creep Rupture Test in Air A 508	19-Jun-09	11-Sep-09	60.0d	MAT0495	MAT0866	497.0d	Creep Rupture Test in Air A 508															
MAT0505	Long Term Creep Behavior A 508	19-Jun-09	12-May-11	480.0d	MAT0495	MAT0866	77.0d	Long Term Creep Behavior A 508															
MAT0510	Determine Stress Relaxation Behavior A 508	19-Jun-09	10-Sep-09	60.0d	MAT0495	MAT0515	453.0d	Determine Stress Relaxation Behavior A 508															
MAT0515	Determine Stress Relaxation Behavior of Fatigued Damaged A 508	11-Sep-09	03-Dec-09	60.0d	MAT0510	MAT0866	453.0d	Determine Stress Relaxation Behavior of Fatigued Damaged A 508															
MAT0520	Determine Baseline Tensile Properties A 508	19-Jun-09	10-Sep-09	60.0d	MAT0495	MAT0866	513.0d	Determine Baseline Tensile Properties A 508															
MAT0525	Cyclic Stress-strain Curves A 508	19-Jun-09	10-Sep-09	60.0d	MAT0495	MAT0866	513.0d	Cyclic Stress-strain Curves A 508															
MAT0530	Long Term Thermal Aging A508	07-Dec-10	13-Jun-16	1440.0d	MAT0495, MAT0680	MAT0535, MAT0540, MAT0545	1826.0d	Long Term Thermal Aging A508															
MAT0535	Determine Baseline Tensile Properties A 508	14-Jun-16	23-Jan-17	160.0d	MAT0530	MAT0867	2146.0d	Determine Baseline Tensile Properties A 508															
MAT0540	Baseline Toughness Measurements A 508	14-Jun-16	23-Jan-17	160.0d	MAT0530	MAT0867	2146.0d	Baseline Toughness Measurements A 508															
MAT0545	Determine Stress Relaxation Behavior A 508	14-Jun-16	23-Jan-17	160.0d	MAT0530	MAT0550	1826.0d	Determine Stress Relaxation Behavior A 508															
MAT0550	Toughness of Stress Relieved A 508	24-Jan-17	04-Sep-17	160.0d	MAT0545	MAT0555	1826.0d	Toughness of Stress Relieved A 508															
MAT0555	Toughness of Fatigue Damaged Stress Relieved A 508	05-Sep-17	16-Apr-18	160.0d	MAT0550	MAT0867	1826.0d	Toughness of Fatigue Damaged Stress Relieved A 508															

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Activity ID	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	2023
MAT0560	Shielded Metal Arc Welding A 508	19-Jun-09		0.0d	MAT0495	MAT0565, MAT0570, MAT0575, MAT0580, MAT0585	453.0d																
MAT0565	Determine Baseline Tensile Properties A 508 Shielded Metal Arc Weld	19-Jun-09	10-Sep-09	60.0d	MAT0560	MAT0566	513.0d																
MAT0570	Creep Rupture Test In Air Fatigue Damaged Material A 508 shielded Metal Arc Weld	19-Jun-09	10-Sep-09	60.0d	MAT0560	MAT0566	513.0d																
MAT0575	Creep Rupture Test In Air A 508 Shielded Metal Arc Weld	19-Jun-09	10-Sep-09	60.0d	MAT0560	MAT0566	513.0d																
MAT0580	Determine Stress Relaxation Behavior A 508 Shielded Metal Arc Weld	19-Jun-09	10-Sep-09	60.0d	MAT0560	MAT0585	453.0d																
MAT0585	Determine Stress Relaxation Behavior of Fatigued Damaged A 508 Shielded Metal Arc Weld	11-Sep-09	03-Dec-09	60.0d	MAT0580	MAT0566	453.0d																
MAT0590	Long Term Thermal Aging Shielded Metal Arc Welding	07-Dec-10	13-Jun-16	1440.0d	MAT0560, MAT0680	MAT0595, MAT0600, MAT0605	1826.0d																
MAT0595	Determine Baseline Tensile Properties A 508 Shielded Metal Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0590	MAT0667	2146.0d																
MAT0600	Baseline Toughness Measurements A 508 Shielded Metal Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0590	MAT0667	2146.0d																
MAT0605	Determine Stress Relaxation Behavior A 508 Shielded Metal Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0590	MAT0610	1826.0d																
MAT0610	Toughness of Stress Relieved A 508 Shielded Metal Arc Weld	24-Jan-17	04-Sep-17	160.0d	MAT0605	MAT0615	1826.0d																
MAT0615	Toughness of Fatigue Damaged Stress Relieved A 508 Shielded Metal Arc Weld	05-Sep-17	16-Apr-18	160.0d	MAT0610	MAT0667	1826.0d																
MAT0620	Submerged Arc Weld A 508	19-Jun-09		0.0d	MAT0495	MAT0625, MAT0630, MAT0640, MAT0645, MAT0650	453.0d																
MAT0625	Determine Baseline Tensile Properties A 508 Submerged Arc Weld	19-Jun-09	10-Sep-09	60.0d	MAT0620	MAT0665	4068.0d																
MAT0630	Determine Stress Relaxation Behavior A 508 Submerged Arc Weld	19-Jun-09	10-Sep-09	60.0d	MAT0620	MAT0635	453.0d																
MAT0635	Determine Stress Relaxation Behavior of Fatigued Damaged A 508 Submerged Arc Weld	11-Sep-09	03-Dec-09	60.0d	MAT0630	MAT0665	453.0d																
MAT0640	Creep Rupture Test In Air Fatigue Damaged Material A 508 Submerged Arc Weld	19-Jun-09	10-Sep-09	60.0d	MAT0620	MAT0665	513.0d																
MAT0645	Creep Rupture Test In Air A 508 Submerged Arc Weld	19-Jun-09	10-Sep-09	60.0d	MAT0620	MAT0665	513.0d																
MAT0650	Long Term Thermal Aging A 508 Submerged Arc Weld	07-Dec-10	13-Jun-16	1440.0d	MAT0620, MAT0680	MAT0655, MAT0660, MAT0665	1826.0d																
MAT0655	Determine Baseline Tensile Properties A 508 Submerged Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0650	MAT0667	2146.0d																
MAT0660	Baseline Toughness Measurements A 508 Submerged Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0650	MAT0667	2146.0d																
MAT0665	Determine Stress Relaxation Behavior A 508 Submerged Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0650	MAT0670	1826.0d																
MAT0670	Toughness of Stress Relieved A 508 Submerged Arc Weld	24-Jan-17	04-Sep-17	160.0d	MAT0665	MAT0675	1826.0d																
MAT0675	Toughness of Fatigue Damaged Stress Relieved A 508 Submerged Arc Weld	05-Sep-17	16-Apr-18	160.0d	MAT0670	MAT0667	1826.0d																
MAT0680	Thermal Aging and Long-term Behavior Laboratory	05-Jan-10*	06-Dec-10	240.0d		MAT0650, MAT0690, MAT0630, MAT0720, MAT07	1826.0d																

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MAT0685	Acquire Heavy Section A 533B Forging	01-Oct-08*	18-Jun-09	180.0d		MAT0690, MAT0695, MAT0715, MAT0750, MAT0810, MAT0707	438.0d	Acquire Heavy Section A 533B Forging																							
MAT0690	Creep Rupture Test In Air A 533B	19-Jun-09	11-Sep-09	80.0d	MAT0685	MAT0695	497.0d	Creep Rupture Test In Air A 533B																							
MAT0695	Long Term Creep Behavior A 533B	19-Jun-09	02-Mar-15	1440.0d	MAT0685	MAT0867	2618.0d	Long Term Creep Behavior A 533B																							
MAT0700	Determine Stress Relaxation Behavior A 533B	19-Jun-09	10-Sep-09	60.0d	MAT0685	MAT0705	453.0d	Determine Stress Relaxation Behavior A 533B																							
MAT0705	Determine Stress Relaxation Behavior of Fatigued Damaged A 533B	11-Sep-09	03-Dec-09	60.0d	MAT0700	MAT0866	453.0d	Determine Stress Relaxation Behavior of Fatigued Damaged A 533B																							
MAT0710	Determine Baseline Tensile Properties A 533B	19-Jun-09	10-Sep-09	60.0d	MAT0685	MAT0866	513.0d	Determine Baseline Tensile Properties A 533B																							
MAT0715	Cyclic Stress-strain Curves A533B	19-Jun-09	10-Sep-09	60.0d	MAT0685	MAT0866	513.0d	Cyclic Stress-strain Curves A533B																							
MAT0720	Long Term Thermal Aging A533B	07-Dec-10	13-Jun-16	1440.0d	MAT0685, MAT0680	MAT0725, MAT0730, MAT0735	1826.0d	Long Term Thermal Aging A533B																							
MAT0725	Determine Baseline Tensile Properties A 533B	14-Jun-16	23-Jan-17	160.0d	MAT0720	MAT0867	2146.0d	Determine Baseline Tensile Properties A 533B																							
MAT0730	Baseline Toughness Measurements A 533B	14-Jun-16	23-Jan-17	160.0d	MAT0720	MAT0867	2146.0d	Baseline Toughness Measurements A 533B																							
MAT0735	Determine Stress Relaxation Behavior A 533B	14-Jun-16	23-Jan-17	160.0d	MAT0720	MAT0740	1826.0d	Determine Stress Relaxation Behavior A 533B																							
MAT0740	Toughness of Stress Relieved A 533B	24-Jan-17	04-Sep-17	160.0d	MAT0735	MAT0745	1826.0d	Toughness of Stress Relieved A 533B																							
MAT0745	Toughness of Fatigue Damaged Stress Relieved A 533B	05-Sep-17	16-Apr-18	160.0d	MAT0740	MAT0867	1826.0d	Toughness of Fatigue Damaged Stress Relieved A 533B																							
MAT0750	Shielded Metal Arc Welding A 533B	19-Jun-09		0.0d	MAT0685	MAT0755, MAT0760, MAT0765, MAT0770, MAT0780	453.0d	Shielded Metal Arc Welding A 533B																							
MAT0755	Determine Baseline Tensile Properties A 533B Shielded Metal Arc Weld	19-Jun-09	10-Sep-09	60.0d	MAT0750	MAT0866	513.0d	Determine Baseline Tensile Properties A 533B Shielded Metal Arc Weld																							
MAT0760	Creep Rupture Test In Air Fatigue Damaged Material A 533B shielded Metal Arc Weld	19-Jun-09	10-Sep-09	60.0d	MAT0750	MAT0866	513.0d	Creep Rupture Test In Air Fatigue Damaged Material A 533B shielded Metal Arc Weld																							
MAT0765	Creep Rupture Test In Air A 533B Shielded Metal Arc Weld	19-Jun-09	10-Sep-09	60.0d	MAT0750	MAT0866	513.0d	Creep Rupture Test In Air A 533B Shielded Metal Arc Weld																							
MAT0770	Determine Stress Relaxation Behavior A 533B Shielded Metal Arc Weld	19-Jun-09	10-Sep-09	60.0d	MAT0750	MAT0775	453.0d	Determine Stress Relaxation Behavior A 533B Shielded Metal Arc Weld																							
MAT0775	Determine Stress Relaxation Behavior of Fatigued Damaged A 533B Shielded Metal Arc Weld	11-Sep-09	03-Dec-09	60.0d	MAT0770	MAT0866	453.0d	Determine Stress Relaxation Behavior of Fatigued Damaged A 533B Shielded Metal Arc 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	Long Term Thermal Aging A533B Shielded Metal Arc Welding																							
MAT0785	Determine Baseline Tensile Properties A 533B Shielded Metal Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0780	MAT0867	2146.0d	Determine Baseline Tensile Properties A 533B Shielded Metal Arc Weld																							
MAT0790	Baseline Toughness Measurements A 533B Shielded Metal Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0780	MAT0867	2146.0d	Baseline Toughness Measurements A 533B Shielded Metal Arc Weld																							
MAT0795	Determine Stress Relaxation Behavior A 533B Shielded Metal Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0780	MAT0800	1826.0d	Determine Stress Relaxation Behavior A 533B Shielded Metal Arc Weld																							
MAT0800	Toughness of Stress Relieved A 533B Shielded Metal Arc Weld	24-Jan-17	04-Sep-17	160.0d	MAT0795	MAT0805	1826.0d	Toughness of Stress Relieved A 533B Shielded Metal Arc Weld																							
MAT0805	Toughness of Fatigue Damaged Stress Relieved A 533B Shielded Metal Arc Weld	05-Sep-17	16-Apr-18	160.0d	MAT0800	MAT0867	1826.0d	Toughness of Fatigue Damaged Stress Relieved A 533B Shielded Metal Arc Weld																							
MAT0810	Submerged Arc Weld A 533B	19-Jun-09		0.0d	MAT0685	MAT0815, MAT0820, MAT0830, MAT0835, MAT0840, MAT0845	453.0d	Submerged Arc Weld A 533B																							
MAT0815	Determine Baseline Tensile Properties A 533B Submerged Arc Weld	19-Jun-09	10-Sep-09	60.0d	MAT0810	MAT0866	513.0d	Determine Baseline Tensile Properties A 533B Submerged Arc Weld																							
MAT0820	Determine Stress Relaxation Behavior A 533B Submerged Arc Weld	19-Jun-09	10-Sep-09	60.0d	MAT0810	MAT0825	453.0d	Determine Stress Relaxation Behavior A 533B Submerged Arc Weld																							

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MAT0825	Determine Stress Relaxation Behavior of Fatigued Damaged A 533B Submerged Arc Weld	11-Sep-09	03-Dec-09	60.0d	MAT0820	MAT0865	453.0d																	
MAT0830	Creep Rupture Test in Air Fatigue Damaged Material A 533B Submerged Arc Weld	19-Jun-09	10-Sep-09	60.0d	MAT0810	MAT0865	513.0d																	
MAT0835	Creep Rupture Test in Air A 533B Submerged Arc Weld	19-Jun-09	10-Sep-09	60.0d	MAT0810	MAT0865	513.0d																	
MAT0841	Long Term Thermal Aging A 533B Submerged Arc Weld	07-Dec-10	13-Jun-16	1440.0d	MAT0810, MAT0680	MAT0845, MAT0850, MAT0855	1826.0d																	
MAT0845	Determine Baseline Tensile Properties A 533B Submerged Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0841	MAT0867	2146.0d																	
MAT0850	Baseline Toughness Measurements A 533B Submerged Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0841	MAT0867	2146.0d																	
MAT0855	Determine Stress Relaxation Behavior A 533B Submerged Arc Weld	14-Jun-16	23-Jan-17	160.0d	MAT0841	MAT0860	1826.0d																	
MAT0860	Toughness of Stress Relieved A 533B Submerged Arc Weld	24-Jan-17	04-Sep-17	160.0d	MAT0855	MAT0865	1826.0d																	
MAT0865	Toughness of Fatigue Damaged Stress Relieved A 533B Submerged Arc Weld	05-Sep-17	16-Apr-18	160.0d	MAT0860	MAT0867	1826.0d																	
MAT0866	Data Support for NRC License Complete		12-May-11	0.0d	MAT0500, MAT0505, MAT0515, MAT0520, MAT0525, MAT0565, MAT0570, MAT0575, MAT0585, MAT0635, MAT0640, MAT0645, MAT0690, MAT0705, MAT0650, MAT06	PM220	78.0d																	
MAT0867	NRC Aging Data Support Complete		16-Apr-18	0.0d	MAT0845, MAT0860, MAT0865, MAT0785, MAT0790, MAT0805, MAT0895, MAT0725, MAT0730, MAT0745, MAT0655, MAT0660, MAT06		1826.0d																	
C.Q.10.50.20.02	Graphite Core Component Materials	01-Oct-07	29-Mar-18	2711.0d			1839.0d																	
C.Q.10.50.20.02.01	Baseline Characterization	07-Apr-08	08-Mar-16	2040.0d			2375.0d																	
MAT0870	Procure Graphite	07-Apr-08*	02-Jun-08	41.0d		MAT0875	272.0d																	
MAT0875	Initiate Multi-axial Graphite Testing	03-Jun-08		0.0d	MAT0870	MAT0965	272.0d																	
MAT0965	Initiate Inter-Billet Characterization	03-Jun-08	31-Dec-09	413.0d	MAT0875	MAT0970, MAT0980	272.0d																	
MAT0970	Continue Inter-Billet Characterization	01-Jan-10	30-Jun-11	390.0d	MAT0965	MAT0975, MAT0990, MAT1005	272.0d																	
MAT0975	Finish Inter-Billet Characterization	01-Jul-11	28-Dec-12	391.0d	MAT0970	MAT1115	924.0d																	
MAT0980	Procure New Graphite	03-Jun-08	29-May-09	259.0d	MAT0965		4142.0d																	
MAT0990	Initiate Intra-Billet Characterization	03-Jan-11	29-Jun-12	390.0d	MAT0970	MAT0995, MAT1040, MAT1005	272.0d																	
MAT0995	Continue Intra-Billet Characterization	02-Jul-12	01-Jan-14	393.0d	MAT0990	MAT1000, MAT1055	272.0d																	
MAT1000	Finish Intra-Billet Characterization	02-Jan-14	30-Jun-15	389.0d	MAT0995	MAT1115	272.0d																	
MAT1005	Procure New Graphite	02-Jul-12	27-Jun-13	259.0d	MAT0990, MAT1040, MAT0970		3078.0d																	
MAT1040	Initiate Lot-to-Lot Characterization	03-Jan-11	29-Jun-12	390.0d	MAT0990	MAT1045, MAT1005	272.0d																	
MAT1045	Continue Lot-to-Lot Characterization	02-Jul-12	01-Jan-14	393.0d	MAT1040	MAT1050, MAT1055	272.0d																	

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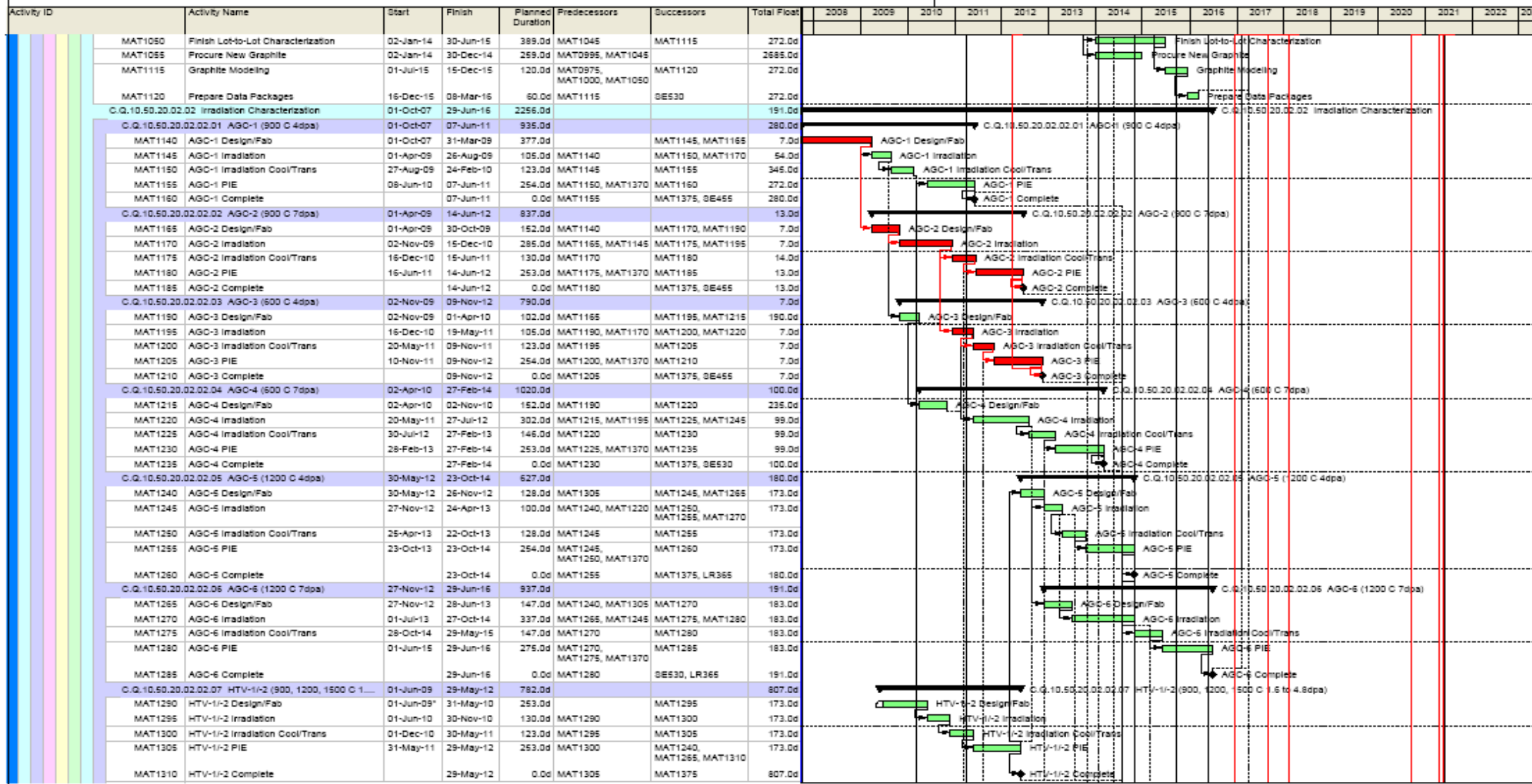
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C.Q.10.50.20.02.02.08	PIE Facility Preparation	04-Feb-08	07-Jun-10	584.0d			280.0d																
MAT1315	Initiate/Plan PIE Facility	04-Feb-08*	31-Dec-08	238.0d		MAT1320, MAT1325, MAT1340	280.0d																
MAT1320	Prepare Lab Space	01-Jan-09	15-Jun-09	118.0d	MAT1315	MAT1330	280.0d																
MAT1325	Spec Containment Area	01-Jan-09	16-Mar-09	53.0d	MAT1315	MAT1330	345.0d																
MAT1330	Install Containment Area in Labs	15-Jun-09	12-Oct-09	85.0d	MAT1325, MAT1320	MAT1335	280.0d																
MAT1335	Install Equipment in Containment Area	13-Oct-09	12-Apr-10	130.0d	MAT1330	MAT1365	280.0d																
MAT1340	Pre-irradiation Facility Preps	04-Feb-08	06-Oct-08	176.0d	MAT1315	MAT1345, MAT1350	335.0d																
MAT1345	Pre-irradiation Equipment Purchase	07-Oct-08	20-Apr-09	140.0d	MAT1340	MAT1350	335.0d																
MAT1350	Install & Check-out Equip in Pre-irradiation Laboratory	07-Oct-08	20-Apr-09	140.0d	MAT1345, MAT1340	MAT1365	335.0d																
MAT1365	System Checkout	13-Apr-10	10-May-10	20.0d	MAT1350, MAT1335	MAT1370	280.0d																
MAT1370	Integrated System Testing	11-May-10	07-Jun-10	20.0d	MAT1365	MAT1155, MAT1180, MAT1205, MAT1330, MAT1370	280.0d																
C.Q.10.50.20.02.03	Material Properties Modeling	24-Oct-14	14-Jul-15	450.0d			180.0d																
MAT1375	Baseline Characterization Response	24-Oct-14	26-Feb-15	90.0d	MAT1310, MAT1260, MAT1235, MAT1310, MAT11	MAT1380	180.0d																
MAT1380	Model Non-irradiated Response of Whole Core	27-Feb-15	05-Nov-15	180.0d	MAT1375	MAT1385	180.0d																
MAT1385	Irradiated Model of Whole Core	05-Nov-15	14-Jul-16	180.0d	MAT1380	SES30	180.0d																
C.Q.10.50.20.02.05	Graphite Lots	01-Oct-07	29-Mar-18	2711.0d			636.0d																
MAT1450	Down select 1 Graphite Type	01-Oct-07	01-Oct-07	0.0d		MAT1455	614.0d																
MAT1455	Graphite Specification	01-Oct-07	30-Sep-08	253.0d	MAT1450	MAT1460, MAT1465	614.0d																
MAT1460	Vendor (QA) Qualification	30-Sep-08	25-Nov-08	40.0d	MAT1455	MAT1475	703.0d																
MAT1465	Prepare Graphite Procurement Package	08-Apr-09	08-Apr-09	0.0d	MAT1455	MAT1470	614.0d																
MAT1470	Graphite Procurement Initiated	08-Apr-09	08-Apr-09	0.0d	MAT1465	MAT1475	614.0d																
MAT1475	Produce Graphite Lot (Lot duration = 9 mo/Core = 3 yrs)	08-Apr-09	17-Dec-09	180.0d	MAT1460, MAT1470	MAT1480	614.0d																
MAT1480	NOI to Procure Fuel Element & Reflector Graphite	20-Sep-12	22-Aug-13	240.0d	MAT1475	MAT1485	636.0d																
MAT1485	Fuel Element & Reflector Graphite Qual ...	22-Aug-13	25-Jun-15	480.0d	MAT1480	MAT1490	636.0d																
MAT1490	Production & Machine Fuel Element & Reflector Graphite	25-Jun-15	29-Mar-18	720.0d	MAT1485	FC165	636.0d																
C.Q.10.50.30	Methods	01-Oct-07	29-Oct-15	2081.0d			2469.0d																
MTH100	Matched - Index - Refrac. (MIR)	01-Oct-08*	30-Sep-11	760.0d		MTH195	1354.0d																
MTH105	Intrgrl Thermal Fluids Couple Code Development/Validation	01-Oct-07	22-Apr-11	900.0d		MTH110	734.0d																
MTH110	V&V Intrgrl Thermal Fluids Code	25-Apr-11	24-Jun-13	550.0d	MTH105	NHG755	734.0d																
MTH115	Differential Data -PU239 Demo Measurements	01-Oct-08*	25-Sep-09	250.0d		MTH130, MTH120	930.0d																
MTH120	Differential Data -PU239 Measurements	28-Sep-09	22-Sep-10	250.0d	MTH115	MTH125	1055.0d																
MTH125	Differential Data -PU242 Measurements	23-Sep-10	16-Sep-11	250.0d	MTH120	MTH135	1055.0d																
MTH130	Differential Data Code Development	28-Sep-09	16-Sep-11	600.0d	MTH115	MTH135	930.0d																
MTH135	Differential Data Code V&V	19-Sep-11	12-Sep-12	250.0d	MTH125, MTH130	NHG755	930.0d																
MTH140	Air Ingress -Stratified Flow Experiments	01-Oct-08*	22-Sep-10	600.0d			3738.0d																
MTH145	Air Ingress -Adv Graphite Oxidation studies	01-Oct-07	21-Sep-09	600.0d		MTH150, MTH155	774.0d																
MTH150	Air Ingress -Integral Air Ingress Studies	05-Apr-09	25-Sep-11	630.0d	MTH145	NHG755	1174.0d																
MTH155	Air Ingress -Stratified Flow Code Development	05-Apr-09	25-Mar-11	600.0d	MTH145	MTH165, MTH160	774.0d																
MTH160	Air Ingress -Stratified Flow Code V&V	01-Jun-09	07-Mar-12	700.0d	MTH155	MTH195	1188.0d																
MTH165	V&V Thermal Fluids	13-May-10	29-Apr-13	750.0d	MTH155	NHG755	774.0d																
MTH170	RCOS: Design	01-Oct-08*	22-Sep-10	600.0d		MTH175	329.0d																

█ Remaining Level of Effort
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Activity ID	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	2023
MTH175	RCCG: Build Exper. & Start Fac	23-Sep-10	16-Sep-11	250.0d	MTH170	MTH180	329.0d																
MTH180	RCCG: Perform Experiments	19-Sep-11	15-Mar-13	375.0d	MTH175	MTH190	329.0d																
MTH185	RCCG: Code Development	28-Oct-10	17-Oct-12	500.0d		MTH190	329.0d																
MTH190	RCCG: Code V&V	18-Oct-12	14-Oct-13	250.0d	MTH180, MTH185	MTH195	329.0d																
MTH195	Complete Separate Effects Validation	22-Apr-13	22-Jun-15	550.0d	MTH180, MTH190, MTH190	NH0755	329.0d																
MTH200	Adv. Cross Section Methods SGM	01-Oct-07	30-Sep-09	507.0d		MTH210, MTH235, MTH240, MTH230	264.0d																
MTH205	Stand alone Hex-Z Solver Code	01-Oct-07	30-Sep-08	254.0d		MTH245, MTH210, MTH225, MTH215, MTH275	80.0d																
MTH210	Couple Hex-Z Solver to SGM	01-Oct-09	30-Sep-10	253.0d	MTH200, MTH205	MTH250, MTH276	271.0d																
MTH215	Hex-Z Nodal Depletion w/BC	01-Oct-08	30-Sep-09	253.0d	MTH205	MTH255, MTH220, MTH276	264.0d																
MTH220	Hex-Z Nodal Depl w/BC & SGM	01-Oct-09	11-Oct-10	260.0d	MTH215, MTH200	MTH260, MTH276	264.0d																
MTH225	Hex-Z Stand alone Kinetics	01-Oct-08	25-Sep-09	250.0d	MTH205	MTH265, MTH230, MTH276	80.0d																
MTH230	Hex-Z Kinetics w/TH Feedback	28-Sep-09	06-Aug-10	217.0d	MTH225	MTH270, MTH235, MTH276	80.0d																
MTH235	Hex-Z Kinetics w/TH Feedback & SGM	09-Aug-10	05-Jul-11	230.0d	MTH200, MTH230	MTH275, MTH276	80.0d																
MTH240	V&V Adv. Cross Section SGM	27-Jun-08	30-Sep-09	320.0d	MTH200	MTH276	524.0d																
MTH245	V&V Standalone Hex-Z Solver Code	01-Oct-07	09-Jan-09	320.0d	MTH205	MTH276	711.0d																
MTH250	V&V Coupled Hex-Z Solver & SGM	29-Jun-09	30-Sep-10	320.0d	MTH210	MTH276	271.0d																
MTH255	V&V Hex-Z Nodal Depletion w/BC	27-Jun-08	30-Sep-09	320.0d	MTH215	MTH276	524.0d																
MTH260	V&V Hex-Z Nodal Depl w/BC & SGM	09-Jul-09	11-Oct-10	320.0d	MTH220	MTH276	264.0d																
MTH265	V&V Hex-Z Standalone Kinetics	24-Jun-08	25-Sep-09	320.0d	MTH225	MTH276	527.0d																
MTH270	V&V Hex-Z Kinetics w/TH Feedback	05-May-09	06-Aug-10	320.0d	MTH230	MTH276	310.0d																
MTH275	V&V Hex-Z Kinetics w/TH & SGM	02-Apr-10	05-Jul-11	320.0d	MTH235	MTH276	80.0d																
MTH276	Hex-Z Methods Validation Complete		05-Jul-11	0.0d	MTH205, MTH210, MTH215, MTH220, MTH225, MTH230, MTH235, MTH240, MTH245, MTH250, MTH255, MTH260, MTH265, MTH270, MTH275	PM270	80.0d																
C.Q.10.50.30.01	CTF Integral Scaled Test	01-Oct-08	29-Oct-15	1831.0d			2469.0d																
MTH280	Integral Thermal Fluids Scaled Test-Scaling/Facility Sizing & Design	01-Oct-08	30-Sep-10	506.0d		MTH290	2715.0d																
MTH290	Integral Thermal Fluids Scaled Test-Fabrication	01-Oct-10	02-Jan-13	567.0d	MTH280	MTH295	2715.0d																
MTH295	Integral Scaled Thermal Fluids Test Experiments	24-Jan-14	29-Oct-15	450.0d	MTH290, CTF920		2447.0d																
C.Q.10.50.40	First Core	01-Oct-09	27-Aug-19	2584.0d			1470.0d																
FC100	Design/Build 1st Core Production Facility	01-Oct-09	06-Apr-12	657.0d		FC110, FC140	517.0d																
FC110	1st Core Equipment Install & Checkout	09-Apr-12	17-Mar-14	506.0d	FC100	FC120	2234.0d																
FC120	1st Core Fabrication Proof Test Fuel	18-Mar-14	12-Mar-15	259.0d	FC110	FC130	2234.0d																
FC130	1st Core Proof Test Irradiation	01-Sep-16	13-Mar-18	399.0d	FC120, FL00715		1850.0d																
FC140	Fab Production Fuel in Pilot Facility	01-Oct-09	19-Dec-13	1101.0d	FC100	FC150	517.0d																
FC150	Fabricate NNGNP First Core	20-Dec-13	14-Jun-16	649.0d	FC140	FC160	517.0d																
FC160	1st Core Proof Safety Test & PIE	22-Sep-16	11-Sep-18	514.0d	FC150	FC165	517.0d																
FC165	Load Fuel in Graphite	12-Sep-16	27-Aug-19	250.0d	FC160, MAT1490	FC170	517.0d																
FC170	Deliver 1st Core	27-Aug-19		0.0d	FC165	PM810	517.0d																
C.Q.10.60	Construction	22-Mar-17	10-Dec-20	972.0d			1133.0d																
C.Q.10.60.18	Construction and Fab Support Building	22-Mar-17	28-Nov-17	180.0d			12.0d																

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PM700	Welding Facility Construction	22-Mar-17	28-Nov-17	180.0d	PE260, PM500	HT8815, HT8818, HT8820, HT8830, PC8835, PC8840, PC8875	2.0d																
PM710	Fabrication Facility Construction	22-Mar-17	28-Nov-17	180.0d	PE260, PM500	HT8815, HT8820, HT8830, PC8835, PC8840, PC8875	2.0d																
PM715	NGNP Site Prep & Underground Utilities	22-Mar-17	28-Nov-17	180.0d	PM500	NH8840, NH8845, NH8850, NH8855, NH8865, NH8870, NH8875, NH8880, NH8885, NH8890, NH8895, NH8915, NH8920, NH8930	12.0d																
C.Q.10.60.20 Nuclear Heat Supply System Construction																							
NH8810	NHSS Component Testing	18-Oct-19	02-Apr-20	120.0d	NH8835, NH8855, NH8861, NH8871, NH8891, NH8921, NH8931, NH8935, NH8941, NH8945	NH8815	0.0d																
NH8815	NHSS Integrated Testing	03-Apr-20	10-Dec-20	180.0d	NH8810	PM520	0.0d																
C.Q.10.60.20.01 Reactor Unit System Construction																							
NH8820	Reactor Pressure Vessel Construction	04-May-18	17-Oct-19	380.0d	PM500, LR341	NH8836	0.0d																
NH8825	Core Internal Structure Construction	04-May-18	17-Oct-19	380.0d	PM500, LR341	NH8836	0.0d																
NH8830	Reactivity Control System Construction	04-May-18	17-Oct-19	380.0d	PM500, LR341	NH8836	0.0d																
NH8835	Neutron Source System Construction	04-May-18	17-Oct-19	380.0d	PM500, LR341	NH8836	0.0d																
NH8836	Reactor Unit System Construction Complete	17-Oct-19	17-Oct-19	0.0d	NH8820, NH8825, NH8830, NH8835	NH8810	0.0d																
C.Q.10.60.20.02 Core Conditioning System Construction																							
NH8840	CCS Blower Construction	29-Nov-17	01-Oct-19	480.0d	PM500, PM715	NH8856	12.0d																
NH8845	CCS Heat Exchanger Construction	29-Nov-17	01-Oct-19	480.0d	PM500, PM715	NH8856	12.0d																
NH8850	CCS Valves Construction	29-Nov-17	01-Oct-19	480.0d	PM500, PM715	NH8856	12.0d																
NH8855	CCS Piping Construction	29-Nov-17	01-Oct-19	480.0d	PM500, PM715	NH8856	12.0d																
NH8856	Core Conditioning System Construction Complete	01-Oct-19	01-Oct-19	0.0d	NH8840, NH8845, NH8850, NH8855	NH8810	12.0d																
C.Q.10.60.20.03 Reactor Cavity Cooling System Construction																							
NH8860	Reactor Cavity Cooling System Construct...	04-May-18	17-Oct-19	380.0d	PM500, LR341	NH8861	0.0d																
NH8861	Reactor Cavity Cooling System Construction Complete	17-Oct-19	17-Oct-19	0.0d	NH8860	NH8810	0.0d																
C.Q.10.60.20.04 Fuel Handling and Storage System Construction																							
NH8865	Fuel Loading subsystem Construction	29-Nov-17	01-Oct-19	480.0d	PM500, PM715	NH8871	12.0d																
NH8870	High-Level Waste Handling subsystem Construction	29-Nov-17	01-Oct-19	480.0d	PM500, PM715	NH8871	12.0d																
NH8871	Fuel handling & Storage System Construction Complete	01-Oct-19	01-Oct-19	0.0d	NH8865, NH8870	NH8810	12.0d																
C.Q.10.60.20.05 Helium Service System Construction																							
NH8875	PHTS Inventory Control System Construct...	29-Nov-17	01-Oct-19	480.0d	PM500, PM715	NH8891	12.0d																
NH8880	SHTS Inventory Control System Construct...	29-Nov-17	01-Oct-19	480.0d	PM500, PM715	NH8891	12.0d																
NH8885	PHTS Helium Purification System Construction	29-Nov-17	01-Oct-19	480.0d	PM500, PM715	NH8891	12.0d																
NH8890	SHTS Helium Purification System Construction	29-Nov-17	01-Oct-19	480.0d	PM500, PM715	NH8891	12.0d																
NH8891	Helium Service system Construction Complete	01-Oct-19	01-Oct-19	0.0d	NH8875, NH8880, NH8885, NH8890	NH8810	12.0d																
C.Q.10.60.20.06 I&C System Construction																							
NH8895	Operational Control System Construction	04-May-18	17-Oct-19	380.0d	PM500, LR341	NH8921	0.0d																

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NH8901	Reactor Protection System Construction	04-May-18	17-Oct-19	390.0d	PM500, LR341	NH8921	0.0d																	
NH8905	Equipment Protection System Construction	29-Nov-17	14-May-19	390.0d	PM500, PM715	NH8921	112.0d																	
NH8910	Post-event Monitoring and Recovery System Construction	04-May-18	17-Oct-19	380.0d	PM500, LR341	NH8921	0.0d																	
NH8915	Uninterruptible Power System Construction	29-Nov-17	01-Oct-19	480.0d	PM500, PM715	NH8921	12.0d																	
NH8920	1E Batteries Construction	29-Nov-17	01-Oct-19	480.0d	PM500, PM715	NH8921	12.0d																	
NH8921	I&C system Construction Complete		17-Oct-19	0.0d	NH8995, NH8901, NH8905, NH8910, NH8915, NH8920	NH8810	0.0d																	
C.Q.10.60.20.07	Cooling Water System Construction	29-Nov-17	17-Oct-19	482.0d			0.0d																	
NH8925	Auxiliary Component Cooling Water System Const	04-May-18	17-Oct-19	390.0d	PM500, LR341	NH8931	0.0d																	
NH8930	Equipment Protection Cooling Circuit Construction	29-Nov-17	01-Oct-19	480.0d	PM500, PM715	NH8931	12.0d																	
NH8931	Cooling Water System Construction Com...		17-Oct-19	0.0d	NH8925, NH8930	NH8810	0.0d																	
C.Q.10.60.20.08	Electrical Distribution System Construction	04-May-18	17-Oct-19	390.0d			0.0d																	
NH8935	Electrical Distribution System Construction	04-May-18	17-Oct-19	390.0d	PM500, LR341	NH8936	0.0d																	
NH8936	Electrical Distribution System Construction Complete		17-Oct-19	0.0d	NH8935	NH8810	0.0d																	
C.Q.10.60.20.09	Reactor Building HVAC System Construction	04-May-18	17-Oct-19	390.0d			0.0d																	
NH8940	Reactor Building HVAC System Construc...	04-May-18	17-Oct-19	390.0d	PM500, LR341	NH8941	0.0d																	
NH8941	Reactor Building HVAC System Construction Complete		17-Oct-19	0.0d	NH8940	NH8810	0.0d																	
C.Q.10.60.20.10	Primary Loop Initial Clean-up System Constr...	04-May-18	17-Oct-19	390.0d			0.0d																	
NH8945	Primary Loop Initial Clean-up System Construction	04-May-18	17-Oct-19	390.0d	PM500, LR341	NH8946	0.0d																	
NH8946	Primary Loop Initial Clean-up System Const Complete		17-Oct-19	0.0d	NH8945	NH8810	0.0d																	
C.Q.10.60.30	Heat Transport System Construction	22-Mar-17	24-Nov-20	960.0d			12.0d																	
HT8805	HTS Component Testing	02-Oct-19	17-Mar-20	120.0d	HT8825, HT8845, HT8812	HT8810	12.0d																	
HT8810	HTS Integrated Testing	18-Mar-20	24-Nov-20	180.0d	HT8805	PM520	12.0d																	
HT8812	HTS Procurement	22-Mar-17	24-Dec-19	720.0d	PM500	HT8805	72.0d																	
C.Q.10.60.30.01	HTS Primary Heat Transport System Constr...	22-Mar-17	01-Oct-19	660.0d			12.0d																	
HT8815	PHTS Circulator Construction	29-Nov-17	01-Oct-19	480.0d	PM700, PM710	HT8826	12.0d																	
HT8818	PHTS Valve Construction	29-Nov-17	01-Oct-19	480.0d	PM700	HT8826	12.0d																	
HT8820	Intermediate Heat Exchanger Construction	29-Nov-17	01-Oct-19	480.0d	PM700, PM710	HT8826	12.0d																	
HT8822	Piping Construction	22-Mar-17	03-Sep-19	640.0d	PM500	HT8826	32.0d																	
HT8825	Pressure Relief System Construction	22-Mar-17	03-Sep-19	640.0d	PM500	HT8826	32.0d																	
HT8826	Primary HTS System Construction Complete		01-Oct-19	0.0d	HT8815, HT8818, HT8820, HT8822, HT8825	HT8805	12.0d																	
C.Q.10.60.30.02	HTS Secondary Heat Transport System Con...	22-Mar-17	01-Oct-19	660.0d			12.0d																	
HT8830	SHTS Circulator Construction	29-Nov-17	01-Oct-19	480.0d	PM700, PM710	HT8846	12.0d																	
HT8835	Helium Isolation Valves Construction	22-Mar-17	03-Sep-19	640.0d	PM500	HT8846	32.0d																	
HT8840	Piping Construction	22-Mar-17	03-Sep-19	640.0d	PM500	HT8846	32.0d																	
HT8845	SHTS Flow Coupling and Mixer Construct...	22-Mar-17	03-Sep-19	640.0d	PM500	HT8846	32.0d																	
HT8846	Secondary HTS Construction Complete		01-Oct-19	0.0d	HT8830, HT8835, HT8840, HT8845	HT8805	12.0d																	
C.Q.10.60.40	Hydrogen Production System Construction	22-Mar-17	04-Sep-18	390.0d			1725.0d																	
HP8790	Fabricate Hydrogen Production Process	22-Mar-17	20-Mar-18	260.0d	HP8950, PM500	HP8795, HP8800	592.0d																	
HP8795	Complete H2 Process Construction		20-Mar-18	0.0d	HP8790		1845.0d																	
HP8800	Couple Process to VHTR	21-Mar-18	04-Sep-18	120.0d	HP8790	PM520	592.0d																	
C.Q.10.60.50	Power Conversion System Construction	22-Mar-17	08-Dec-20	970.0d			2.0d																	

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PCG520	PCG Component Testing	27-Nov-19	14-Apr-20	100.0d	PCG545, PCG530, PCG571, PCG511, PCG631, PCG535, PCG641, PCG545	PCG525	2.0d																
PCG525	PCG Integrated Testing	15-Apr-20	08-Dec-20	170.0d	PCG520	PM520	2.0d																
PCG530	PCG Procurement	22-Mar-17	29-Oct-19	680.0d	PM500	PCG520	122.0d																
C.Q.10.60.50.01	Turbine Generator System Construction	22-Mar-17	26-Nov-19	700.0d			2.0d																
PCG535	High-Pressure Turbine Construction	29-Nov-17	26-Nov-19	520.0d	PM700, PM710	PCG571	2.0d																
PCG540	Intermediate-Pressure Turbine Construction	29-Nov-17	26-Nov-19	520.0d	PM700, PM710	PCG571	2.0d																
PCG545	Low-Pressure Turbines Construction	22-Mar-17	29-Oct-19	680.0d	PM500	PCG571	22.0d																
PCG550	Turbine Control Valve System Construction	22-Mar-17	29-Oct-19	680.0d	PM500	PCG571	22.0d																
PCG555	Generator and Auxiliaries Construction	22-Mar-17	29-Oct-19	680.0d	PM500	PCG571	22.0d																
PCG560	Lube Oil System Construction	22-Mar-17	29-Oct-19	680.0d	PM500	PCG571	22.0d																
PCG565	Vacuum System Construction	22-Mar-17	29-Oct-19	680.0d	PM500	PCG571	22.0d																
PCG570	Air-Cooled Condenser Construction	22-Mar-17	29-Oct-19	680.0d	PM500	PCG571	22.0d																
PCG571	Turbine Generator System Construction Complete		26-Nov-19	0.0d	PCG535, PCG540, PCG545, PCG550, PCG555, PCG560, PCG565, PCG570	PCG520	2.0d																
C.Q.10.60.50.02	Main Stream System Construction	22-Mar-17	26-Nov-19	700.0d			2.0d																
PCG575	Steam Generator Construction	29-Nov-17	26-Nov-19	520.0d	PM700, PM710	PCG611	2.0d																
PCG580	Startup/Shutdown Steam System	22-Mar-17	29-Oct-19	680.0d	PM500	PCG611	22.0d																
PCG585	Extraction and Auxiliary Steam System	22-Mar-17	29-Oct-19	680.0d	PM500	PCG611	22.0d																
PCG590	Steam Bypass/Dump System Construction	22-Mar-17	29-Oct-19	680.0d	PM500	PCG611	22.0d																
PCG595	Seal Water System Construction	22-Mar-17	29-Oct-19	680.0d	PM500	PCG611	22.0d																
PCG600	Glad Steam System Construction	22-Mar-17	29-Oct-19	680.0d	PM500	PCG611	22.0d																
PCG605	Steam Vents and Drains Construction	22-Mar-17	29-Oct-19	680.0d	PM500	PCG611	22.0d																
PCG610	Steam Pressure Relief System Construction	22-Mar-17	29-Oct-19	680.0d	PM500	PCG611	22.0d																
PCG611	Main Stream System Construction Complete		26-Nov-19	0.0d	PCG575, PCG580, PCG585, PCG590, PCG595, PCG600, PCG605, PCG610	PCG520	2.0d																
C.Q.10.60.50.03	Feed water and Condensate System Constr...	22-Mar-17	29-Oct-19	680.0d			22.0d																
PCG615	Heater Drains system Construction	22-Mar-17	29-Oct-19	680.0d	PM500	PCG631	22.0d																
PCG620	Feed water Heater System Construction	22-Mar-17	29-Oct-19	680.0d	PM500	PCG631	22.0d																
PCG625	High-Pressure Feed water Pump Construction	22-Mar-17	29-Oct-19	680.0d	PM500	PCG631	22.0d																
PCG630	Condensate Pumps Construction	22-Mar-17	29-Oct-19	680.0d	PM500	PCG631	22.0d																
PCG631	Feed water & Condensate System Construction		29-Oct-19	0.0d	PCG615, PCG620, PCG625, PCG630	PCG520	22.0d																
C.Q.10.60.50.04	PCG Control and Instrumentation System Co...	22-Mar-17	29-Oct-19	680.0d			22.0d																
PCG635	PCG Control and Instrumentation System Construction	22-Mar-17	29-Oct-19	680.0d	PM500	PCG636	22.0d																
PCG636	PCG I&C System Construction Complete		29-Oct-19	0.0d	PCG635	PCG520	22.0d																
C.Q.10.60.50.05	PCG Electrical Distribution System Construct...	22-Mar-17	29-Oct-19	680.0d			22.0d																
PCG640	PCG Electrical Distribution System Construction	22-Mar-17	29-Oct-19	680.0d	PM500	PCG641	22.0d																
PCG641	PCG Electrical Distribution System Const Complete		29-Oct-19	0.0d	PCG640	PCG520	22.0d																
C.Q.10.60.50.06	Turbine Building HVAC Construction	22-Mar-17	29-Oct-19	680.0d			22.0d																
PCG645	Turbine Building HVAC Construction	22-Mar-17	29-Oct-19	680.0d	PM500	PCG520, PCG645	22.0d																
PCG646	Turbine Building HVAC Construction Complete		29-Oct-19	0.0d	PCG645	PCG520	22.0d																
C.Q.10.60.60	Balance of Plant & Overall Site Construction	22-Mar-17	08-Dec-20	970.0d			2.0d																

█ Remaining Level of Effort
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 ◻ Start Constraint

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BOP200	BOP Site Preparation	22-Mar-17	08-Aug-17	100.0d	PM500	BOP205, BOP225	2.0d																	
BOP205	BOP Underground Utilities Construction	09-Aug-17	26-Dec-17	100.0d	BOP200	BOP210	2.0d																	
BOP210	BOP Foundations Construction	27-Dec-17	15-May-18	100.0d	BOP205	BOP215	2.0d																	
BOP215	BOP Buildings Construction	15-May-18	08-Jan-19	170.0d	BOP210	BOP220, BOP230	2.0d																	
BOP220	BOP Piping & Equipment Installation	09-Jan-19	03-Sep-19	170.0d	BOP215	BOP240	12.0d																	
BOP225	BOP Electrical Distribution Construction	09-Aug-17	03-Apr-18	170.0d	BOP200	BOP240	382.0d																	
BOP230	BOP Instrumentation & Control Construct...	09-Jan-19	17-Sep-19	180.0d	BOP215	BOP240	2.0d																	
BOP235	BOP Procurement	22-Mar-17	09-Jul-19	600.0d	PM500	BOP240	52.0d																	
BOP240	BOP Component Testing	18-Sep-19	03-Mar-20	120.0d	BOP230, BOP235, BOP220, BOP225	BOP245	2.0d																	
BOP245	BOP Integrated Testing	04-Mar-20	08-Dec-20	200.0d	BOP240	PM520	2.0d																	
C.Q.10.70 Start-up & Initial Operations																								
PM800	NGNP Integrated Testing	11-Dec-20	22-Jul-21	160.0d	PM550	PM810, PM580	20.0d																	
PM810	Load Fuel	20-Aug-21	02-Sep-21	10.0d	PM800, LR360, FC170, PE220, PM580, PE210, PE215, PE225, PE230	PM800, PM815	0.0d																	
PM815	Initial Criticality	03-Sep-21	28-Oct-21	40.0d	PM810	PM817	0.0d																	
PM817	Initial Criticality Complete	28-Oct-21	28-Oct-21	0.0d	PM815	PM820	0.0d																	
PM820	Low Power Testing	28-Oct-21	23-Dec-21	40.0d	PM817	PM825	0.0d																	
PM825	Power Ascension Testing	24-Dec-21	14-Apr-22	80.0d	PM820	PM830	0.0d																	
PM830	Hot Operations		14-Apr-22	0.0d	PM825	SOP900, HP9900, HT9900, NH9900, PC9900, PE900, PM900	0.0d																	
C.Q.10.80 NGNP Hot Operations																								
BOP900	Balance of Plant & Overall Site Operations	15-Apr-22	15-Apr-25	783.0d	PM830	PM940	0.0d																	
HP9900	Hydrogen Production System Operations	15-Apr-22	15-Apr-25	783.0d	PM830	PM940	0.0d																	
HT9900	Heat Transport System Operations	15-Apr-22	15-Apr-25	783.0d	PM830	PM940	0.0d																	
NH9900	Nuclear Heat Supply System Operations	15-Apr-22	15-Apr-25	783.0d	PM830	PM940	0.0d																	
PC9900	Power Conversion System Operations	15-Apr-22	15-Apr-25	783.0d	PM830	PM940	0.0d																	
PE900	Program Engineering Support Operations	15-Apr-22	15-Apr-25	783.0d	PM830	PM940	0.0d																	
PM900	Program Management Support Operations	15-Apr-22	15-Apr-25	783.0d	PM830	PM940, PM901	0.0d																	
PM901	NGNP Hot Operations Complete	15-Apr-25	15-Apr-25	0.0d	PM900, FL90540		0.0d																	
C.Q.10.90 NGNP DD&D																								
BOP1000	Balance of Plant & Overall Site D&DD	15-Apr-25	15-Apr-25	0.0d	PM640		0.0d																	
HP91000	Hydrogen Production System D&DD	15-Apr-25	15-Apr-25	0.0d	PM640		0.0d																	
HT91000	Heat Transport System D&DD	15-Apr-25	15-Apr-25	0.0d	PM640		0.0d																	
NH91000	Nuclear Heat Supply system D&DD	15-Apr-25	15-Apr-25	0.0d	PM640		0.0d																	
PC91000	Power Conversion system D&DD	15-Apr-25	15-Apr-25	0.0d	PM640		0.0d																	
PE1000	Program Engineering Support D&DD	15-Apr-25	15-Apr-25	0.0d	PM640		0.0d																	
PM1000	Program Management Support D&DD	15-Apr-25	15-Apr-25	0.0d	PM640		0.0d																	
C.Q.20 Component Test Facility (CTF)																								
C.Q.20.10 CTF Owners Engineer																								
C.Q.20.10.10 CTF Project Management Support																								
CTF100	Final PED & PDS Request	07-Apr-08	04-Apr-08*	0.0d		CTF105	4050.0d																	
CTF105	PED Funding Authorizations for FY-10	07-Apr-08	06-Oct-09	392.0d	CTF100		4050.0d																	
CTF110	Prepare FY08 CTF Detailed Work Plan	01-Oct-07	01-Oct-07	0.0d		CTF115	85.0d																	
CTF115	INL Detailed Work Plan Review	01-Oct-07	01-Oct-07	0.0d	CTF110	CTF120	85.0d																	
CTF120	Prepare Work Packages	01-Oct-07	08-Oct-07	5.0d	CTF115	CTF125	85.0d																	
CTF125	Subcontractors Prepare Work Package	08-Oct-07	22-Oct-07	10.0d	CTF120	CTF130	85.0d																	
CTF130	BEA Review, Negotiate and Notice to Proceed	22-Oct-07	12-Nov-07	15.0d	CTF125	CTF200	85.0d																	

C.Q.20 Component Test Facility (CTF)

C.Q.20.10 CTF Owners Engineer
C.Q.20.10.10 CTF Project Management Support

Final PED & PDS Request
PED Funding Authorizations for FY-10
Prepare FY08 CTF Detailed Work Plan
INL Detailed Work Plan Review
Prepare Work Packages
Subcontractors Prepare Work Package
BEA Review, Negotiate and Notice to Proceed

Remaining Level of Effort
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CTF135	NEPA-EIS Evaluation/Process During Conceptual	28-Apr-08	02-Oct-09	374.0d	CTF200		4053.0d	[Gantt bar]																							
CTF140	State of Idaho Air Permits	25-Apr-08	01-Oct-09	374.0d	CTF200		4054.0d	[Gantt bar]																							
CTF145	Prepare CTF Project Management Docu...	02-Jun-08	11-Feb-09	182.0d	CTF150		4220.0d	[Gantt bar]																							
CTF150	Issue PCN to Subcontractors & Finalize CTF WPs	04-Apr-08	02-Jun-08	41.0d	CTF225	CTF145, CTF235, CTF270, CTF290	85.0d	[Gantt bar]																							
CTF155	FED & PDS Funding Authorization FY-11 Update	07-Apr-09*	01-Oct-10	389.0d			3792.0d	[Gantt bar]																							
C.Q.20.10.10.01	CTF Develop and Award EPC Contract(s)	16-Dec-08	11-Jan-10	272.0d			3982.0d	[Gantt bar]																							
CTF160	CTF EPC Scope of Work	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF165	85.0d	[Gantt bar]																							
CTF165	INL EPC SOW Review	11-Jun-09	09-Jul-09	20.0d	CTF160, CTF230	CTF170, CTF175	85.0d	[Gantt bar]																							
CTF170	DOE Review & Project Validation	09-Jul-09	01-Oct-09	80.0d	CTF165		4054.0d	[Gantt bar]																							
CTF175	Miss. Validation/Design Baseline, IPR (Optional)	09-Jul-09	01-Oct-09	80.0d	CTF165	CTF180, CTF185	85.0d	[Gantt bar]																							
CTF180	DOE or PPP Issues EPC SOW & RFP	01-Oct-09	24-Dec-09	80.0d	CTF175		3994.0d	[Gantt bar]																							
CTF185	FY 10 Continuing Resolution	01-Oct-09	11-Jan-10	72.0d	CTF175	CTF445	85.0d	[Gantt bar]																							
C.Q.20.10.10.02	INL Site Power Upgrade	24-Jun-08	02-Oct-09	311.0d			3557.0d	[Gantt bar]																							
CTF190	Site Power Line Approval/Negotiations Idaho Power	24-Jun-08*	02-Jan-09	139.0d		CTF195	3557.0d	[Gantt bar]																							
CTF195	Site Power Line-Idaho Power Design 230KV Line	05-Jan-09	02-Oct-09	195.0d	CTF190	CTF492	3557.0d	[Gantt bar]																							
C.Q.20.10.12	CTF Project Engineer Support	12-Nov-07	11-Jun-09	385.0d			4134.0d	[Gantt bar]																							
CTF200	Industry CTF Recommendations Studies	12-Nov-07	08-Feb-08	84.0d	CTF130	CTF135, CTF140, CTF205, CTF210, CTF215, CTF220, CTF225	85.0d	[Gantt bar]																							
CTF205	INL CTF Site Selection Report	08-Feb-08	18-Mar-08	27.0d	CTF200		4456.0d	[Gantt bar]																							
CTF210	INL CTF PCD F&ORs	08-Feb-08	18-Mar-08	27.0d	CTF200		4456.0d	[Gantt bar]																							
CTF215	CTF Mission Need	08-Feb-08	18-Mar-08	27.0d	CTF200		4456.0d	[Gantt bar]																							
CTF220	CTF Facility Configuration Study	08-Feb-08	18-Mar-08	27.0d	CTF200		4456.0d	[Gantt bar]																							
CTF225	CTF ICOR SOW - Engineering Sections	08-Feb-08	04-Apr-08	40.0d	CTF200	CTF150	85.0d	[Gantt bar]																							
CTF230	CTF EPC SOW - Engineering Sections	16-Dec-08	11-Jun-09	127.0d	CTF320	CTF165	85.0d	[Gantt bar]																							
C.Q.20.20	CTF Conceptual Design	02-Jun-08	01-Oct-09	323.0d			4054.0d	[Gantt bar]																							
CTF235	CTF TFR	02-Jun-08	03-Sep-08	67.0d	CTF150	CTF300	85.0d	[Gantt bar]																							
CTF240	Conceptual Cost Estimate	14-May-09	09-Jul-09	40.0d	CTF250	CTF260	4114.0d	[Gantt bar]																							
CTF245	INL Review	11-Jun-09	25-Jun-09	10.0d	CTF325, CTF330, CTF335, CTF340, CTF345, CTF350, CTF355, CTF360, CTF365, CTF370, CTF375, CTF380, CTF385, CTF390, CTF400, CTF405, CTF410, CTF415, CTF420, CTF425, CTF430, CTF435, CTF440	CTF250	4054.0d	[Gantt bar]																							
CTF250	Conceptual Design Rvw Comment Incorporation	25-Jun-09	09-Jul-09	10.0d	CTF245	CTF255, CTF240	4054.0d	[Gantt bar]																							
CTF255	DOE Review & Project Validation	09-Jul-09	01-Oct-09	80.0d	CTF250	CTF260	4054.0d	[Gantt bar]																							
CTF260	Conceptual Design Complete		01-Oct-09	0.0d	CTF255, CTF240	CTF265	4054.0d	[Gantt bar]																							
CTF265	Critical Decision-1		01-Oct-09	0.0d	CTF260		4054.0d	[Gantt bar]																							
C.Q.20.20.01	Initial Conceptual Studies & Alternatives Analysis	30-Jun-08	29-Oct-08	77.0d			4282.0d	[Gantt bar]																							
CTF270	Study #1 TDRM and Test Plans for High Temp SBCs	30-Jun-08	01-Oct-08	67.0d	CTF150	CTF275, CTF280, CTF285	4295.0d	[Gantt bar]																							
CTF275	TDRM Working Meeting	30-Jun-08		0.0d	CTF270	CTF280	4382.0d	[Gantt bar]																							

█ Remaining Level of Effort
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CTF280	25% CTF Study Reviews		01-Oct-08	0.00	CTF270, CTF275		4315.00																
CTF285	Study #2 Integrated NGNP NT SSC Test Schedule	06-Aug-08	01-Oct-08	40.00	CTF270	CTF290, CTF295	4295.00																
CTF290	Prepare ICD Other Studies	06-Aug-08	01-Oct-08	40.00	CTF150, CTF285	CTF295	4315.00																
CTF295	ICD Studies Review (50% ICD Review)	29-Oct-08	01-Oct-08	0.00	CTF285, CTF290		4295.00																
C.Q.20.20.02 CTF Initial Conceptual Design Report		03-Sep-08	16-Dec-08	54.00			79.00																
CTF300	CTF Test Loop Initial Conceptual Design	03-Sep-08	11-Nov-08	49.00	CTF235	CTF310, CTF305	85.00																
CTF305	Prepare CTF ICDR	10-Sep-08	01-Dec-08	58.00	CTF300	CTF310	85.00																
CTF310	ICDR 90% Review	01-Dec-08	09-Dec-08	6.00	CTF300, CTF305	CTF315	85.00																
CTF315	Incorporate ICDR Comments	09-Dec-08	16-Dec-08	5.00	CTF310	CTF320	85.00																
CTF320	Issue ICDR		16-Dec-08	0.00	CTF315	CTF160, CTF230, CTF325, CTF330, CTF335, CTF340, CTF345, CTF350, CTF355, CTF360, CTF365, CTF370, CTF380, CTF385, CTF390, CTF400, CTF405, CTF410, CTF415, CTF420, CTF425, CTF430, CTF435, CTF440, CTF375	85.00																
C.Q.20.20.03 CTF Conceptual Design Studies		16-Dec-08	12-Feb-09	35.00			4139.00																
CTF325	Study #3 Prepare Loop Efficiency Study	16-Dec-08	12-Feb-09	42.00	CTF320	CTF245	4139.00																
CTF330	Study #4 CTF & NGNP Fab. Facility Study	16-Dec-08	12-Feb-09	42.00	CTF320	CTF245	4139.00																
CTF335	Study #5 CFA Final Site Selection & Dev ...	16-Dec-08	12-Feb-09	42.00	CTF320	CTF245	4139.00																
CTF340	Study #6 International & Other User Requirements	16-Dec-08	12-Feb-09	42.00	CTF320	CTF245	4139.00																
CTF345	Study #7 Power Usage Study	16-Dec-08	12-Feb-09	42.00	CTF320	CTF245	4139.00																
C.Q.20.20.04 CTF Conceptual Design Report		16-Dec-08	11-Jun-09	120.00			4054.00																
CTF350	Administrative Facility Conceptual Design	16-Dec-08	11-Jun-09	127.00	CTF320	CTF245	4054.00																
CTF355	High-Bay Facility Conceptual Design	16-Dec-08	11-Jun-09	127.00	CTF320	CTF245	4054.00																
CTF360	Warehouse, Chem Prep & Storage Bldg	16-Dec-08	11-Jun-09	127.00	CTF320	CTF245	4054.00																
CTF365	Water Process Building	16-Dec-08	11-Jun-09	127.00	CTF320	CTF245	4054.00																
CTF370	Helium Supply System	16-Dec-08	11-Jun-09	127.00	CTF320	CTF245	4054.00																
CTF375	Underground Utilities	16-Dec-08	11-Jun-09	127.00	CTF320	CTF245	4054.00																
CTF380	Cooling Towers	16-Dec-08	11-Jun-09	127.00	CTF320	CTF245	4054.00																
CTF385	Generator Building	16-Dec-08	11-Jun-09	127.00	CTF320	CTF245	4054.00																
CTF390	Electrical & Communications Distribution	16-Dec-08	11-Jun-09	127.00	CTF320	CTF245	4054.00																
C.Q.20.20.05 CTF Conceptual System Design Descriptions (SDD/ICD)		16-Dec-08	11-Jun-09	120.00			4054.00																
CTF400	Administrative Facility Conceptual Design	16-Dec-08	11-Jun-09	127.00	CTF320	CTF245	4054.00																
CTF405	High-Bay Facility Conceptual Design	16-Dec-08	11-Jun-09	127.00	CTF320	CTF245	4054.00																
CTF410	Warehouse, Chem Prep & Storage Bldg	16-Dec-08	11-Jun-09	127.00	CTF320	CTF245	4054.00																
CTF415	Water Process Building	16-Dec-08	11-Jun-09	127.00	CTF320	CTF245	4054.00																
CTF420	Helium Supply System	16-Dec-08	11-Jun-09	127.00	CTF320	CTF245	4054.00																
CTF425	Underground Utilities	16-Dec-08	11-Jun-09	127.00	CTF320	CTF245	4054.00																
CTF430	Cooling Towers	16-Dec-08	11-Jun-09	127.00	CTF320	CTF245	4054.00																
CTF435	Generator Building	16-Dec-08	11-Jun-09	127.00	CTF320	CTF245	4054.00																
CTF440	Electrical & Communications Distribution	16-Dec-08	11-Jun-09	127.00	CTF320	CTF245	4054.00																
C.Q.20.30 CTF Preliminary Design		11-Jan-10	20-Jan-11	269.00			3713.00																
C.Q.20.30.10 CTF Project Management Support		11-Jan-10	20-Jan-11	269.00			3713.00																

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Activity ID	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	2023
CTF445	Start EPC Contract	11-Jan-10		0.0d	CTF185	CTF455, CTF500, CTF505, CTF510, CTF515, CTF520, CTF525, CTF530, CTF535, CTF540, CTF545, CTF550, CTF555, CTF560, CTF565, CTF570, CTF575, CTF580, CTF585, CTF590, CTF595, CTF600, CTF605, CTF610, CTF615, CTF620, CTF625, CTF630	85.0d			Start EPC Contract													
CTF450	POC Const Funding Authorization Update FY 12	05-Apr-10*	21-Sep-10	122.0d		CTF540, CTF510	3530.0d			POC Const Funding Authorization Update FY 12													
CTF455	Update Program Management Documents	11-Jan-10	31-May-10	100.0d	CTF445		3882.0d			Update Program Management Documents													
CTF460	CTF Prelim Design Cost Estimate	31-May-10	12-Jul-10	30.0d	CTF570		3852.0d			CTF Prelim Design Cost Estimate													
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, CTF560, CTF565, CTF570	CTF470	85.0d			NGNP Preliminary 90% Design Review													
CTF470	Incorporate Prelim Design Rev Comments	28-Jun-10	12-Jul-10	10.0d	CTF465	CTF475	85.0d			Incorporate Prelim Design Rev Comments													
CTF475	Issue Preliminary Design	12-Jul-10	12-Jul-10	0.0d	CTF470	CTF480	85.0d			Issue Preliminary Design													
CTF480	Miss Validation/Baseline Const, IPR (optional)	12-Jul-10	17-Sep-10	49.0d	CTF475	CTF485, CTF490	85.0d			Miss Validation/Baseline Const, IPR (optional)													
CTF485	OECM/EIR Review	12-Jul-10	20-Sep-10	50.0d	CTF480	CTF490	85.0d			OECM/EIR Review													
CTF490	Critical Decision-2 & 3a		20-Sep-10	0.0d	CTF485, CTF480	CTF555, CTF670, CTF675, CTF680, CTF730, CTF735, CTF760, CTF765, CTF775, CTF785, CTF800	85.0d			Critical Decision-2 & 3a													
C.Q.20.30.10.01 INL Site Power Upgrade		02-Feb-10	20-Jan-11	253.0d			3713.0d			C.Q.20.30.10.01 INL Site Power Upgrade													
CTF492	Site Power Line - Idaho Power Design 230kV Line	02-Feb-10	03-May-10	65.0d	CTF195	CTF494, CTF496	3557.0d			Site Power Line - Idaho Power Design 230kV Line													
CTF494	Site Power Line - Idaho Power Const. Power Line	04-May-10	22-Sep-10	102.0d	CTF492		3799.0d			Site Power Line - Idaho Power Const. Power Line													
CTF496	Site Power Line - BEA 230kV Line/Substation Const	04-May-10	20-Jan-11	189.0d	CTF492	CTF560	3557.0d			Site Power Line - BEA 230kV Line/Substation Const													
C.Q.20.30.12 CTF Project Engineer Support		11-Jan-10	31-May-10	100.0d			3882.0d			C.Q.20.30.12 CTF Project Engineer Support													
CTF500	Update CTF Project Engineering Docume...	11-Jan-10	31-May-10	100.0d	CTF445		3882.0d			Update CTF Project Engineering Documents													
C.Q.20.30.01 CTF Preliminary Design Dwg & Const Specs		11-Jan-10	31-May-10	100.0d			85.0d			C.Q.20.30.01 CTF Preliminary Design Dwg & Const Specs													
CTF505	Preliminary CTF TFR Updates	11-Jan-10	22-Feb-10	30.0d	CTF445	CTF465	155.0d			Preliminary CTF TFR Updates													
CTF510	CTF Loop & Test Equipment Design PD	11-Jan-10	31-May-10	100.0d	CTF445	CTF465	85.0d			CTF Loop & Test Equipment Design PD													
CTF515	High-Bay Facility	11-Jan-10	31-May-10	100.0d	CTF445	CTF465	85.0d			High-Bay Facility													
CTF520	Administrative Support Facility	11-Jan-10	31-May-10	100.0d	CTF445	CTF465	85.0d			Administrative Support Facility													
CTF525	Warehouse, Chem Prep & Storage Bldg	11-Jan-10	31-May-10	100.0d	CTF445	CTF465	85.0d			Warehouse, Chem Prep & Storage Bldg													
CTF530	Water Process Building	11-Jan-10	31-May-10	100.0d	CTF445	CTF465	85.0d			Water Process Building													
CTF535	Sewer System	11-Jan-10	31-May-10	100.0d	CTF445	CTF465	85.0d			Sewer System													
CTF540	Potable Water System	11-Jan-10	31-May-10	100.0d	CTF445	CTF465	85.0d			Potable Water System													
CTF545	Generator Building	11-Jan-10	31-May-10	100.0d	CTF445	CTF465	85.0d			Generator Building													
CTF550	Fire Water System	11-Jan-10	31-May-10	100.0d	CTF445	CTF465	85.0d			Fire Water System													
CTF555	Water Process Building	11-Jan-10	31-May-10	100.0d	CTF445	CTF465	85.0d			Water Process Building													

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CTF560	Cooling Towers	11-Jan-10	31-May-10	100.0d	CTF445	CTF465	85.0d																	
CTF565	Raw Water system	11-Jan-10	31-May-10	100.0d	CTF445	CTF465	85.0d																	
CTF570	Electrical and Communication Distribution	11-Jan-10	31-May-10	100.0d	CTF445	CTF465, CTF460	95.0d																	
C.Q.20.30.02	CTF Prelim Design System Design Descriptions	11-Jan-10	31-May-10	100.0d			3882.0d																	
CTF575	Administrative Facility Conceptual Design	11-Jan-10	31-May-10	100.0d	CTF445		3882.0d																	
CTF580	High-Bay Facility Conceptual Design	11-Jan-10	31-May-10	100.0d	CTF445		3882.0d																	
CTF595	Warehouse, chem Prep & Storage Bldg	11-Jan-10	31-May-10	100.0d	CTF445		3882.0d																	
CTF590	Water Process Bldg	11-Jan-10	31-May-10	100.0d	CTF445		3882.0d																	
CTF595	Helium Supply System	11-Jan-10	31-May-10	100.0d	CTF445		3882.0d																	
CTF600	Underground Utilities	11-Jan-10	31-May-10	100.0d	CTF445		3882.0d																	
CTF605	Cooling Towers	11-Jan-10	31-May-10	100.0d	CTF445		3882.0d																	
CTF610	Generator Building	11-Jan-10	31-May-10	100.0d	CTF445		3882.0d																	
CTF615	Electrical & Communications Distribution	11-Jan-10	31-May-10	100.0d	CTF445		3882.0d																	
C.Q.20.30.03	CTF Performance/Procurement Specifications	11-Jan-10	31-May-10	100.0d			3882.0d																	
CTF620	IHX	11-Jan-10	31-May-10	100.0d	CTF445	CTF635	3453.0d																	
CTF625	Ducting	11-Jan-10	31-May-10	100.0d	CTF445		3882.0d																	
CTF630	Electrical Distribution Equipment	11-Jan-10	31-May-10	100.0d	CTF445		3882.0d																	
C.Q.20.30.04	CTF Procurement	31-May-10	27-Sep-10	85.0d			3453.0d																	
CTF635	Long-Lead Procurements	31-May-10	27-Sep-10	85.0d	CTF620	CTF805	3453.0d																	
C.Q.20.40	CTF Final Design	20-Sep-10	18-Jan-12	348.0d			3454.0d																	
C.Q.20.40.10	CTF Project Management Support - Final Design	20-Sep-10	18-Jan-12	348.0d			3454.0d																	
CTF640	PDG Const funding Authorization Update FY 12	22-Sep-10	04-Oct-11	270.0d	CTF450	CTF645	3630.0d																	
CTF645	CTF PDG Funding Request Submittal		22-Sep-10	0.0d	CTF640		3800.0d																	
CTF650	CTF PDG Funding Authorization FY 13 Update	11-Apr-11*	18-Jan-12	203.0d		CTF840	201.0d																	
CTF655	Update CTF Project Management Docum...	20-Sep-10	03-Oct-11	270.0d	CTF490	CTF715	86.0d																	
C.Q.20.40.10.01	INL Site Power Upgrade	21-Jan-11	26-Aug-11	156.0d			3557.0d																	
CTF660	Site Power Line - BEA Const. 230kV Line Const	21-Jan-11	26-Aug-11	156.0d	CTF495		3557.0d																	
C.Q.20.40.12	CTF Project Engineering Support - Final Design	20-Sep-10	07-Feb-11	100.0d			3702.0d																	
CTF670	Update CTF Project Engineering Docume...	20-Sep-10	07-Feb-11	100.0d	CTF490		3702.0d																	
C.Q.20.40.01	CTF Final Design	20-Sep-10	10-Jan-12	341.0d			3451.0d																	
CTF675	Final CTF TFR Updates	20-Sep-10	01-Nov-10	30.0d	CTF490	CTF740	3652.0d																	
CTF680	CTF Procurement Specifications	20-Sep-10	07-Feb-11	100.0d	CTF490		3702.0d																	
CTF685	CTF System Design Descriptions	20-Sep-10	27-Jun-11	200.0d	CTF730		3602.0d																	
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		3571.0d																	
CTF700	CTF Incorporate Review Comments	26-Jul-11	09-Aug-11	10.0d	CTF690	CTF695, CTF705, CTF710	85.0d																	
CTF705	CTF DOE Review	09-Aug-11	04-Oct-11	40.0d	CTF700		3531.0d																	
CTF710	CTF Mission Validation, IPR	09-Aug-11	04-Oct-11	40.0d	CTF700	CTF715	85.0d																	
CTF715	CTF Critical Decision - 3		04-Oct-11	0.0d	CTF710, CTF655	CTF720	85.0d																	
CTF720	CTF FY 12 Continuing Resolution	04-Oct-11	10-Jan-12	70.0d	CTF715	CTF725	85.0d																	
CTF725	CTF Issue Construction Documents		10-Jan-12	0.0d	CTF720	CTF845, CTF850, CTF855, CTF860, CTF875, CTF885, CTF895, CTF865, CTF870, CTF880, CTF890	85.0d																	
C.Q.20.40.01.01	CTF Final Design Dwgs & Const Specs	20-Sep-10	27-Jun-11	200.0d			3602.0d																	

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CTF730	CTF Loop & Test Equipment	20-Sep-10	27-Jun-11	200.0d	CTF490	CTF685, CTF740, CTF745, CTF750, CTF755, CTF770, CTF780, CTF790, CTF820	85.0d																
CTF735	Civil & Site Prep Final Design	20-Sep-10	07-Mar-11	120.0d	CTF490	CTF840	429.0d																
CTF740	High-Bay Facility	10-Jan-11	27-Jun-11	120.0d	CTF730, CTF675		3602.0d																
CTF745	Administrative Support Facility	10-Jan-11	27-Jun-11	120.0d	CTF730		3602.0d																
CTF750	Warehouse, Chem Prep & Storage Building	10-Jan-11	27-Jun-11	120.0d	CTF730		3602.0d																
CTF755	Water Process Building	10-Jan-11	27-Jun-11	120.0d	CTF730		3602.0d																
CTF760	Sewer System	20-Sep-10	07-Mar-11	120.0d	CTF490		3682.0d																
CTF765	Potable Water System	20-Sep-10	07-Mar-11	120.0d	CTF490		3682.0d																
CTF770	Generator Building	10-Jan-11	27-Jun-11	120.0d	CTF730		3602.0d																
CTF775	Fire Water System	20-Sep-10	07-Mar-11	120.0d	CTF490		3682.0d																
CTF780	Cooling Towers	10-Jan-11	27-Jun-11	120.0d	CTF730		3602.0d																
CTF785	Raw Water System	20-Sep-10	07-Mar-11	120.0d	CTF490		3682.0d																
CTF790	Electrical and Communication Distribution	20-Sep-10	27-Jun-11	200.0d	CTF730	CTF690	85.0d																
C.Q.20.40.02 CTF Procurement		20-Sep-10	10-Jan-12	341.0d			3461.0d																
CTF800	CTF Test Loop Procurement & Fab	20-Sep-10	10-Jan-12	341.0d	CTF490	CTF815	3362.0d																
CTF805	CTF Long-Lead Procurement, cont.	27-Sep-10	06-Jan-12	334.0d	CTF635		3463.0d																
C.Q.20.50 Research and Development							0.0d																
C.Q.20.60 CTF Construction		22-Sep-10	23-Aug-13	762.0d			3038.0d																
C.Q.20.60.10 CTF Project Management Support - Construction		22-Sep-10	23-Aug-13	762.0d			3038.0d																
CTF810	CTF PDS Funding Authorization FY 13 Update	22-Sep-10	14-Jun-11	190.0d	CTF490		3610.0d																
CTF815	CTF Test Loop Procurements & Fab Cont.	10-Jan-12	28-May-12	99.0d	CTF800		3362.0d																
CTF820	Off Site Test Loop Fabrication	27-Jun-11	28-May-12	240.0d	CTF730		85.0d																
CTF825	CTF Test and Turnover	31-May-13	23-Aug-13	60.0d	CTF835, CTF840, CTF845, CTF850, CTF855, CTF860, CTF865, CTF870, CTF875, CTF880, CTF885, CTF890, CTF895	CTF830	85.0d																
CTF830	CTF Construction Complete		23-Aug-13	0.0d	CTF825	CTF800, HP8745, HT8750	85.0d																
C.Q.20.60.02 CTF Construct, Equipment Install, Commission		10-Jan-12	31-May-13	363.0d			85.0d																
CTF835	CTF Loop & Test Equipment	28-May-12	31-May-13	264.0d	CTF820	CTF825	85.0d																
CTF840	Civil & Site Prep Final Design	19-Jan-12	19-Dec-12	240.0d	CTF690, CTF735	CTF825	201.0d																
CTF845	High-Bay Facility	10-Jan-12	12-Dec-12	241.0d	CTF725	CTF825	207.0d																
CTF850	Administrative Support Facility	10-Jan-12	12-Dec-12	241.0d	CTF725	CTF825	207.0d																
CTF855	Warehouse, Chem Prep & Storage Building	10-Jan-12	12-Dec-12	241.0d	CTF725	CTF825	207.0d																
CTF860	Water Process Building	10-Jan-12	12-Dec-12	241.0d	CTF725	CTF825	207.0d																
CTF865	Sewer System	10-Jan-12	12-Dec-12	241.0d	CTF725	CTF825	207.0d																
CTF870	Potable Water System	10-Jan-12	12-Dec-12	241.0d	CTF725	CTF825	207.0d																
CTF875	Generator Building	10-Jan-12	12-Dec-12	241.0d	CTF725	CTF825	207.0d																
CTF880	Fire Water System	10-Jan-12	12-Dec-12	241.0d	CTF725	CTF825	207.0d																
CTF885	Cooling Towers	10-Jan-12	31-May-13	363.0d	CTF725	CTF825	85.0d																
CTF890	Raw Water System	10-Jan-12	12-Dec-12	241.0d	CTF725	CTF825	207.0d																
CTF895	Electrical and Communication Distribution	10-Jan-12	31-May-13	363.0d	CTF725	CTF825	85.0d																
C.Q.20.70 CTF Start-up & Initial Operations		23-Aug-13	24-Jan-14	110.0d			85.0d																
CTF900	DOE CTF ORR	23-Aug-13	18-Oct-13	40.0d	CTF830	CTF910	85.0d																
CTF910	DPE Review	18-Oct-13	13-Dec-13	40.0d	CTF900	CTF915	85.0d																
CTF915	OECM/EIR Review	18-Oct-13	13-Dec-13	40.0d	CTF910	CTF920	85.0d																

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