April 21, 2009

Mr. Roy Kasdorf
Nuclear Facility Design and
 Infrastructure Group Lead
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW., Suite 700
Washington, D.C. 20004-2901

Dear Mr. Kasdorf:

This letter is in response to your March 4, 2009, and March 30, 2009, letters to me which contained the Finding Forms documenting the Defense Nuclear Facilities Safety Board's issues on the following two topics:

1. Design Control – Documenting and Maintaining Preliminary Documented Safety-Related Functions and Requirements,
2. Design Control – System Design Descriptions Do Not Incorporate Preliminary Documented Safety Analysis Requirements Adequately.

As you requested, we have completed these Forms and have attached them to this letter with the applicable supporting documentation. Related to the above two findings NNSA is committed to developing and maintaining system design descriptions that are consistent with the Preliminary Documented Safety Analysis and DOE –STD-3024, *Content of System Design Descriptions.*

We look forward to continuing to work with you during your review of the design of the Chemistry and Metallurgy Research Replacement Facility (CMRR) design needed to support the Board's CMRR Certification to Congress as specified in Section 3112 of the Duncan Hunter National Defense Authorization Act for Fiscal Year 2009.

If you have any questions, please contact me or have your staff contact Patrick Rhoads (202) 586-7859.

Sincerely,

Gerald L. Talbot Jr.
Assistant Deputy Administrator
 for Nuclear Safety and Operations

Attachments
cc:
M. Whitaker, HS-1.1
D. Nichols, NA-2.1
J. McConnell, NA-171
M. Thompson, NA-172
H. LeDoux, LASO

Board Findings
Chemistry and Metallurgy Research Replacement Facility: Congressional Certification Review

Topic: Design Control

Finding Title: Documenting and Maintaining Preliminary Documented Safety Analysis Safety-Related Functions and Requirements

Finding: The overall approach to establishing and maintaining functional and operational requirements can be found in the following CMRR documents: (1) CMRR Program Requirements Document (PRD) (CMRR-PLAN-PM-0101, Rev. 0) January 2009, (2) CMRR Functional and Operational Requirements (F&OR) (CMRR-PLAN-ENG-2801, Rev. 0) January 2009, (3) CMRR Systems Engineering Management Plan (SEMP) (CMRR-PLAN-1905, Rev. 0) September 2007, (4) CMRR Configuration Management Plan (CMP) (CMRR-PLAN-ENG-0301, Rev. 0) December 2008, and (5) CMRR Facility Design Description (FDD) (CMRR-FDD-001, Rev. 0B) January 2009.

Review of these documents indicates that requirements generated through the safety basis development process are not adequately and explicitly integrated into the overall approach to Design Control.

The Preliminary Documented Safety Analysis (PDSA) is the fundamental document that identifies safety-class (SC) and safety-significant (SS) structures, systems, and components (SSCs). Once identified, the PDSA establishes an appropriate set of safety functions (see PDSA Table 3-37), and for each safety function a set of functional requirements and performance criteria are established (see PDSA Chapter 4). The safety envelope for CMRR depends on maintaining control of these functions, requirements, and criteria. Review of the PRD, F&OR, SEMP, CMP, and FDD indicates that this control has not been established.

The PRD requires that CMRR develop a SEMP, and that the SEMP (1) establishes the hierarchy of technical documents and demonstrates how requirements are flowed down, (2) explains how requirements are allocated down to SSCs, and (3) that commits to crosswalk the safety case for SSCs with the design features. As noted above, the PDSA establishes the safety case. Review of the SEMP indicates that the systems engineering process does not include information generated from the PDSA. The SEMP describes an approach that can be labeled "a classic project management approach" (top-down derivation of functions and requirements), silent on the overall roll and preeminence of requirements generated from the PDSA.

The CMRR F&OR is consistent with the PRD, largely silent on requirements generated from the PDSA. The F&OR does include a requirement (R.0.7.m) that "Prior to Title I design of the CMRR, facility design features pertaining to meeting safety, security, and quality assurance criteria shall be identified and tracked as part of the project's technical baseline." It is not clear that the project has met this functional requirement.

The CMRR CMP establishes the overall approach to design control, using the CORE database to establish relationships between functions, requirements, and systems. The CMP indicates that requirements from the PDSA should be explicitly incorporated in the CORE database. However, review of the CMRR FDD suggests that key safety terms such as "safety functions" and "functional requirements" may not be consistent with how this terminology is intended in the PDSA. Review of the FDD design requirements indicates that the basis for these requirements is "code/standard" driven; the link and integration from the PDSA is missing. Given this, integration between the PDSA and System Design Descriptions (SDDs) is questioned.

The CMRR CMP also establishes the overall approach to change control. It is not clear how the change control process establishes appropriate change control of the PDSA safety envelope, specifically change control of SC and SS SSCs, and their safety functions and functional requirements. The change control process should include the appropriate level of control for critical safety-related decisions (note that the Safety Validation Report is how NNSA formally accepts the safety envelope).

Ultimately, SDDs have been developed for each CMRR structure and system. The content of SDDs is described in DOE-STD-3024; the intent of this standard is that SDDs should contain requirements that are derived from the PDSA. This requires that terminology (safety functions and functional requirements) between the PDSA and SDD be consistent to ensure that the safety envelope is properly translated into design requirements, and properly maintained throughout design and operation.

In conclusion, the CMRR project has not developed a requirements approach that formally integrates the safety envelope established by the PDSA. The SEMP is out-of-date and does not fulfill the requirements from the PRD. The CMRR FDD introduces terminology that results in inconsistency with the PDSA. As a result, there is lack of confidence that the FDD and SDDs will properly capture requirements from the PDSA.

Basis for Finding: (1) 10 CFR Part 830.122 (f) (2) Incorporate applicable requirements and design bases in design work and design changes.

(2) DOE Order 413.3A (5)(a) Requirements set forth in this Order are established to ensure adherence to the following principles: (2) Sound disciplined up-from planning, (4) Well-defined and managed performance baseline, and (5) Effective project management systems.

(3) DOE Order 413.3A (5)(i)(3) Change control ensure that project changes are identified, evaluated, coordinated, controlled, reviewed, approved/disapproved, and documented in a manner that best serves the project.

(4) DOE Standard 3024 The SDD is the central coordinating link among the engineering design documents, the facility authorization basis, and implementing procedures. The SDD should contain requirements that are derived from the associated safety analysis.
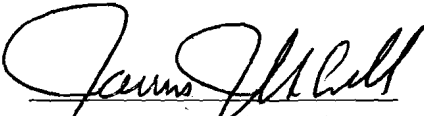
Suggested Resolution or Path Forward: The CMRR project needs to commit to revising the SEMP, CMP, and SDDs to explicitly incorporate requirements from the PDSA. The PDSA safety functions and functional requirements should be explicitly listed in the applicable SDDs. The CMRR project needs to develop a change control process that formally establishes an appropriate level of change control on SSC safety functions and functional requirements to maintain the safety envelope. Schedules for these revisions should be developed as part of the NNSA response.

NNSA Response:
The NNSA is committed to revising the SEMP, CMP, and SDDs to explicitly incorporate the requirements from the PDSA. We agree that the safety functions and functional requirements should be explicitly listed in the appropriate SDDs. A detailed schedule for the completion of these activities (along with the remainder of the work to address the NNSA COAs contained in the PSVR (R0)) is in the attached document. The update of the plans and implementing procedures is included within COA-6.

To address for the long term the consistency of the safety function and functional requirements within the PDSA and the SDDs, these elements will be included in the CORE database and reports for all of the documentation generated from CORE. This includes the PDSA and the SDDs. This is not intended to take the ownership of these descriptions from the safety basis team, but to place them into a common place for configuration control. The details of the schedule to accomplish this explicit conformance are included in the COA-6 portion of the schedule.

DNFSB Final Resolution:

| DNFSB: _____ _____ | NNSA: _____ _4/21/2009_ |
| Roy Kasdorf   Date | James McConnell, Acting NA-17   Date |

Board Findings
Chemistry and Metallurgy Research Replacement Facility: Congressional Certification Review

Topic: Design Control

Finding Title: System Design Descriptions Do Not Incorporate Preliminary Documented Safety Analysis Requirements Adequately

Finding: The Board CMRR certification review is evaluating the adequacy of the flow down of requirements from the Preliminary Documented Safety Analysis (PDSA) to the System Design Descriptions (SDDs). This includes SDD consistency with the PDSA and with DOE-STD-3024, *Content of System Design Descriptions*. The Board previously identified a Finding related to how the CMRR project documents and maintains design control of PDSA safety-related functions and requirements.

As stated in the introduction to DOE-STD-3024, "The SDD is a central coordinating link among the engineering design documents, the facility authorization basis, and implementing procedures." "Accordingly, the development of the SDD must be coordinated with the engineering design process and with the safety analysis development." It is critical that there is traceability between safety functions, functional requirements, performance criteria, and design requirements to ensure that the design of all safety-related structures, systems, and components is adequate. Two key attributes of the SDDs have been given in the Basis for Finding.

Review of several SDDs indicate that:

- The SDD safety functions and functional requirements are not consistent with the corresponding information in PDSA and do not have references back to the PDSA.
- In some cases PDSA functional requirements are identified as safety functions in the SDDs
- In some cases, safety functions are identified in the SDDs that are not identified in the PDSA.
- The PDSA functional requirements and performance criteria are not always included in the SDD.
- The SDD safety requirements are not consistently and explicitly correlated back to the PDSA functional requirements and performance criteria. The requirements are not sorted by importance with PDSA related requirements interspersed with requirements from other sources.
- The bases for the requirements are incomplete, with the PDSA bases behind the requirements not discussed, instead only order or standard bases related to the requirement are given. As a result the importance of the requirements cannot be determined without referencing back to the PDSA contrary to the purpose of the SDDs per DOE-STD-3024.

Attached to this Finding are several examples that document the inconsistencies discussed above. These examples are not intended to be complete, but indicate that systemic PDSA/SDD integration issues exist.

This finding is based on a review of the following SDDs: Nuclear Facility Laboratory Enclosure System (017, Rev 0A), Fire Protection System (019, Rev 0B), Uninterruptible Power Supply System (021, Rev 0B), Engine Generator System (022, Rev 0B), Security Category I Building HVAC System (029, Rev 0B), Security Category I Building (036, Rev 0B), Security Category I Vault Building (037, Rev0B), Instrument Air and Compressed Air System (045, Rev 0H), Facility Management System (048, Rev 0B), Fuel Oil System (059, Rev 0A), Electrical Power

System (062, Rev 0B), Electrical Distribution System (063, Rev 0B).

Basis for Finding: DOE-STD 3024-98, *Content of System Design Descriptions.* Section 2.1, "Statements of safety functions in the SDD shall be consistent with the corresponding information in the facility authorization basis and specific references to the authorization basis documents shall be provided." Section 3. "The safety requirements statements shall be consistent with, and be explicitly correlated back to, the corresponding statements of functional requirements and performance criteria in the facility FSAR, TSRs/OSRs, and other authorization basis documents."

Suggested Resolution or Path Forward:

- **Pre-Certification:** The project must submit a plan for revising the SDDs to ensure consistency with the PDSA, including a schedule for SDD revisions. SDD revisions should be complete prior to award of the Final Design contract.

- **Post-Certification:** Revise the System Design Descriptions to identify PDSA safety functions, functional requirements, and performance criteria in accordance with DOE-STD-3024 to ensure the SDDs serve their function in aiding the complete and efficient incorporation of the PDSA requirements into the final design.
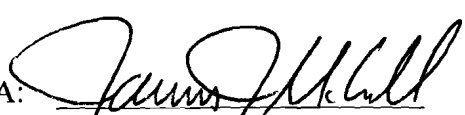
NNSA Response:

The response is similar to that submitted for finding #3. The NNSA agrees that the safety functions and functional requirements should be explicitly listed in the appropriate SDDs. A detailed schedule for the completion of these activities (along with the remainder of the work to address the NNSA COAs contained in the PSVR (R0)) is in the attached document.

To address for the long term the consistency of the safety function and functional requirements within the PDSA and the SDDs, these elements will be included in the CORE database and reports for all of the documentation generated from CORE. This includes the PDSA and the SDDs. This is not intended to take the ownership of these descriptions from the safety basis team, but to place them into a common place for configuration control. The details of the schedule to accomplish this explicit conformance are included in the COA-6 portion of the schedule.

The approach also will address the commitments under the response to Finding #4.

DNFSB Final Resolution:

DNFSB: _____ _____		NNSA: _____ _4/21/2009_	
Roy Kasdorf	Date	James McConnell, NA-17	Date

Attachment

CMRR PDSA and SDDs Crosswalk Comparison

SSC	PDSA Functional Requirement	SDD Functional Requirement	Comments
NF Structure	1. Maintain structural integrity with expected PC-3 seismic criteria. 2. Maintains structural integrity of overhead SSCs (including anchors/supports for FSS and anchors/supports for the cranes in the storage vault) to PC-3 seismic criteria. 3. Maintain structural integrity to prevent SNM reconfiguration to a critically favorable geometry in a design basis earthquake. 4. All SS and SC fire barriers must be functional during and after a seismic event. This includes barrier around the SS diesel generator and associated switchgear rooms in the Auxiliary Building.	The latest NF SDD is Jan. 09 1. The NF shall provide horizontal and vertical load paths for accident loads. 2. The NF shall protect SC and SS SSCs from the effected of natural phenomena. 3. The Security Category I and Vault Buildings shall incorporate appropriate design measures to prevent criticality in normal operation and during and after a DBE. 4. Fire barriers covered under HVAC SDD and ENCL SDD.	1. The functional requirements do not directly align; the SDD speaks to load paths not structural integrity. SDD system functional requirements do not explicitly list PC-3. 2. The PDSA states that the crane lifting mechanism does not need to meet the safety function: the suspended load is not required to remain suspended by these performance criteria. Not clear given accident analysis requirement to protect containers. 3. The SDD interface tables do not clearly list all systems that will require in-structure spectra for seismic qualification. 4. The PDSA states that safety-related HVAC fire dampers and penetration seals will be designed to remain operational after the DBE.
Fire Protection System	1. The FPS water supply must be operational during and after a DBE.	The latest FP SDD is Jan. 09 1. There is no functional requirement in the SDD consistent with the PDSA. PC-3 design of FSS shows up under additional requirements and design requirements.	1. The PDSA performance criteria state that this includes the water supply tank, fire-water pumps, fire-water piping, and power supplies. Specific attention to SSCs that perform an active safety function is needed.

SSC	PDSA Functional Requirement	SDD Functional Requirement	Comments
HEPA Filtered Active Ventilation Zones 1, 2, and 3	1. The HEPA-filtered HVAC system must be operational after a DBE by either operating in the normal Active Ventilation mode or the Reduced Flow Active Ventilation mode (Zones 1 & 2).	The latest HVAC SDD is Jan. 09 1. The Security Category 1 Bldg. HVAC system shall provide passive tertiary confinement during and after a PC-3 DBE. 2. The Security Category I Building shall be designed and qualified to ensure the integrity and operability to permit operation in the reduced ventilation mode following a PC-3 design basis earthquake. 3. All safety related HVAC fire barriers must be functional during and after a PC-3 DBE.	1. The PDSA states that the HVAC system must be capable of maintaining a cascading differential pressure after a DBE while operating in a reduced active ventilation mode. There is no explicit list of components to perform active HVAC functions. Functional requirements related to active confinement ventilation including what portions of the system require PC-3 seismic design need clarification. Specific attention to SSCs that perform an active safety function is needed.
Un-interruptible Power Supply	1. The UPS system must be operable during and after a DBE.	The latest UPS SDD is Jan. 09 The UPS SDD contains no functional requirements related to PC-3. However, the design requirements do state that portions of the system will be PC-3 designed.	1. The PDSA states that for most SS loads, the UPS must meet PC-2 requirements, but some of the SS loads will require PC-3 requirements. Functional requirements related to UPS PC-3 seismic design need clarification. Specific attention to SSCs that perform an active safety function is needed.
Engine Generator System	1. The EGS must be operable after a DBE.	The latest UPS SDD is Jan. 09 The EGS SDD contains no functional requirements related to PC-3. However, the design requirements do state that portions of the system will be PC-3 designed.	EGS includes generator, mechanical support systems, fuel tanks, exhaust and inlet components, electrical support systems. 1. PDSA states that 2 machines are SS PC-3 Functional requirements related to EGS PC-3 seismic design need clarification. Specific attention to SSCs that perform an active safety function is needed.

SSC	PDSA Functional Requirement	SDD Functional Requirement	Comments
Electrical Power	1. Distribute power after a design basis seismic event.	The latest EP SDD is Jan. 09 The electrical power system SDD contains no functional requirements related to PC-3. However, the design requirements do state that portions of the system will be PC-3 designed.	1. The PDSA states that the SS portions of the Electrical Power System shall be capable of operating after a PC-3 seismic event. Functional requirements related to active confinement ventilation, including what portions of the electrical power system require PC-3 seismic design, need clarification. Specific attention to SSCs that perform an active safety function is needed.
Fuel Oil System	1. The Fuel Oil System will function after a design basis seismic event.	The latest FO SDD is Oct. 08 The fuel oil system SDD contains no functional requirements related to PC-3. However, the design requirements do state that portions of the system will be PC-3 designed.	1. The PDSA states that the Fuel Oil System will perform its safety functions after a PC-3 seismic event. Functional requirements related to active confinement ventilation, including what portions of the fuel oil system require PC-3 seismic design, need clarification. Specific attention to SSCs that perform an active safety function is needed.
Electrical Power	1. The Electrical Power System shall distribute offsite and onsite 480Y/277 power to SS loads. 2. The Electrical Power System shall automatically detect a loss of offsite power and switch to the onsite power source. 3. Distribute power after a design basis seismic event.	1. Same as PDSA 2. Same as PDSA 3. None	***PDSA and SDD do not align. However, design requirement for Civil and Structural include this requirement (DR.EP.1) "The Electrical Power System must supply power continuously during and after a Design Basis Seismic event. The SS portions of the Electrical Power System must meet PC-3 seismic criteria as required."

SSC	PDSA Functional Requirement	SDD Functional Requirement	Comments
Engine Generator System	1. The engine generator system will start and supply electrical power to designated SS loads. 2. The engine generator system must be operable after a DBE.	1. Same as PDSA 2. None	***PDSA and SDD do not align. However, design requirement for Civil and Structural include this requirement (DR.DG.38) "The Engine Generator System must supply power continuously during and after a Design Basis Seismic event. The Engine Generator System must meet PC-3 seismic criteria as required."
Active Ventilation	HEPA-filtered ventilation airflow must be maintained to ensure cascading pressure differentials exist between confinement zones during: [F.1.4.1.1.1.1, F1.4.2.1.1.10, F1.4.2.1.1.1.2] • Normal and operational accident conditions such as facility fires, spills, etc. • Abnormal conditions (during system maintenance or in event of a single fan or component isolation damper failure or loss of a single source of offsite power) • During Reduced Flow Active Ventilation mode of operations (Zones 1 and 2 only).	**FR.HVACC.1** The Security Category I Building HVAC Systems (Zone 1, 2, and 3) shall prevent uncontrolled release of airborne radioactivity during normal operation by maintaining cascading differential pressures. **FR.HVACC.2.1.1** The Security Category I Building HVAC Systems (Zone 1 and 2) shall prevent uncontrolled release of airborne radioactivity during a complete loss of offsite electrical power by ensuring that a cascading differential pressure exists between primary confinement and the atmosphere.	The three requirement references are safety functions. Hierarchy of requirements labeled F, FR, DR, and PR are not clear due to inconsistent use. Vault requirements do not support the cascading flow FR.
	The HEPA-filtered HVAC system must be operational after a DBE [FR.HVAC.2.1.2] by either operating in the normal Active Ventilation mode or the Reduced Flow Active Ventilation mode (Zones 1 and 2 only) or in the passive confinement mode (Zones 1, 2 and 3)	**DR.HVACC.1.1.19** The Security Category I Building HVAC System shall be designed and qualified to ensure the integrity and operability to permit operation in the reduced ventilation mode following a PC-3 design basis earthquake.	FR.HVAC.2.1.2 is not referenced in the HVAC SDD. The example provided is not listed in the functional requirement section of the SDD.

SSC	PDSA Functional Requirement	SDD Functional Requirement	Comments
	The HEPA-filtered HVAC system must be operational during and after design basis winds. [FR.HVAC.23]	**DR.CMRR.6.61** The HVAC system shall be protected from the effects of a design basis (PC-3) wind driven missiles.	FR.HVAC.23 is not referenced in the HVAC SDD requirement may not address pressure effects. The example provided is not listed in the functional requirement section of the SDD.
Active Ventilation (continued)	HEPA filtered HVAC system must provide passive tertiary confinement upon loss of active ventilation. [FR.HVACC.2.2]	**FR.HVACC.2** The Security Category I Building HVAC System shall provide passive tertiary confinement for public and environmental safety. **FR.HVACC.2.1.2** The Security Category I Building HVAC System shall provide passive tertiary confinement during and after a PC-3 design basis earthquake **FR.HVACC.2.3** The Security Category I Building HVAC System shall provide passive tertiary confinement during anticipated environmental conditions (temperature, wind, and precipitation). **FR.HVACC.23** The Security Category I Building HVAC PF-4 tunnel subsystem shall provide a cascading differential pressure between the PF-4 tunnel and atmosphere after a complete loss of offsite electrical power.	
	Where the HVAC ductwork penetrates SC fire barriers (e.g. Laboratory perimeter Fire Barriers (the HVAC dampers must meet the higher classification of the fire barriers to provide the safety function to prevent fire propagation consistent with the fire barrier function.	**FR.HVACC.11** All safety related HVAC fire barriers must be functional during and after a design basis earthquake (PC-3 /SC, PC-2/SS).	

SSC	PDSA Functional Requirement	SDD Functional Requirement	Comments
	In addition, the following functional requirements are provided in the SDDs, but are not listed in the PDSA: **FR.HVACC.9** The Security Category I Building HVAC System exhaust airflows with the potential to contain contaminants must be injected into the stack in such a way that they are well-mixed with the bulk air stream. **FR.HVACC.7** The Zone 2 and Zone 3 bubbletight dampers shall close upon loss of ventilation air. **FR.HVACC.8** The Zone 2 and Zone 3 bubbletight dampers shall close upon trip of the exhaust fans. **FR.HVACC.18** The operable HEPA filtration unit isolation dampers shall open upon loss of electrical power. **FR.HVACC.17** The Security Category I Building HVAC System shall be capable of being manually started in reduced flow active ventilation mode after a complete loss of offsite electrical power. **FR.HVACC.19** The Security Category I Building HEPA-filtered ventilation system shall be designed to ensure an inward (to Zone 1) air flow at the most remote enclosure in the event of a glove failure, when operating in a reduced active ventilation mode. **FR.HVACC.3** The Security Category I Building HVAC System shall confine radiological hazards for worker safety.		
Facility Management System	Maintain cascading ΔPs to prevent building over pressurization and maintain confinement.	**IR.FMS.HVACC.3** The Facility Management System shall control ventilation fans to maintain differential pressures between ventilation zones as discussed in the system Sequence of Operation (SoO).	Requirement is in the Interface Requirement Section, not the FR section.
	Drive the HVAC system to passive confinement upon loss of active ventilation.	**IR.FMS.HVACC.4** The Facility Management System shall control the Security Category I Building HVAC System dampers and other components as discussed in the system Sequence of Operation (SoO).	Requirement is in the Interface Requirement Section, not the FR section.
	Protect 1st stage HEPA filters from blowout conditions.	None	No SDD requirement.

SSC	PDSA Functional Requirement	SDD Functional Requirement	Comments
	Control airflow through HEPA filter plenums to preserve filter efficiency.	None	No SDD requirement.
Facility Management System (continued)	Control temperature for rooms that contain SS SSCs as necessary to ensure equipment operability.	None	No SDD requirement.
	The FMS shall control the Fuel Oil Transfer Pumps. [IR.FMS.FO.1]	**IR.FMS.FO.1** The Facility Management System shall remotely control the FOTPs to ensure proper system operation.	Requirement is in the Interface Requirement Section, not the FR section.

In addition, the following functional requirement is provided in the SDD, but is not listed in the PDSA:

DR.FMS.7 The safety significant portion of the Facility Management System shall meet the standards requirements for safety significant functions according to LANL Engineering Standards Manual (ESM), ISD 341-2, Chapter 8, D3060/F1050, Instrumentation and Controls (I&C) Section, Section 3.2 and Table 3-1. The safety significant portion of the Facility Management System shall be designed to be isolated from any adverse effects from the non-safety portion of the Facility Management System.

LosAlamos
NATIONAL LABORATORY
———— EST 1943 ————

Chemistry & Metallurgy Research Facility Replacement (CMRR) Project
CMRR-Division Office
Los Alamos National Laboratory
P.O. Box 1663, MS: E550
Los Alamos, New Mexico 87545   Date: April 15, 2009
505-667-6915/Fax 505-665-6050   Refer To: 09-CMRR-105

Mr. Herman Ledoux
DOE-LASO
P.O. Box 1663, MS: E550
Los Alamos, New Mexico 87544

**Subject: Preliminary Safety Validation Report (PSVR) Rev-0; Conditions Of Approval (COA)
Closure and PDSA G-4 Completion Schedule**

Dear Mr. LeDoux:

Attached is the schedule the project team generated to address and complete the closure of
eight of the nine Conditions Of Approval (COA) included in Rev-0 of the Preliminary Safety
Validation Report (PSVR).

As we discussed, we acknowledge the importance to timely provide the necessary information
for the certification process. We will work to expedite that information as it is identified.

We will address the ninth COA in an update; however most of the work (cost benefit analysis) is
already complete.

A few notes on the schedule content:

• The schedule is organized consistent with the Condition Of Approvals (COAs)
  in the PSVR (Rev-0).

  NOTE: The steps to address COA-9 (waiver related to SDC-4) will be included in a later
  version. The project completed the cost benefit analysis, thus there is not a significant
  amount of effect required to address this COA.

• The open comments from the NNSA reviews are addressed in COA-1 and COA-2. The
  comments are binned into a set of subject areas. Meetings between the site team
  participants (LANL and NNSA) are organized to facilitate decisions on open items. The
  specific comment list is contained in the PSVR (Rev-0).

- The pFHA update included in COA-4 is covered in section 1.4 of the schedule. The update to the fire analysis includes the resolution of a number of NNSA comments, thus all pFHA activities are consolidated with the comment resolution.

- The revision to the safety function and functional requirements in the PDSA and the verbatim description of safety function and functional requirements in the System Design Descriptions (SDDs) are addressed in a combination of COA-6 and COA-8. The specific PDSA table updates discussed in the response to the Defense Nuclear Facilities Safety Board (DNFSB) finding #4 occur within COA-6.

If you have any questions or would like to discuss this further, please contact me at 606-2389.

Sincerely,

Richard A. Holmes
Division Leader

Attachment
    1 - Preliminary Safety Validation Report (PSVR) Rev-0; Conditions Of Approval (COA) Closure and PDSA G-4 Completion Schedule (15pgs)

Cc:
Ivan E. Trujillo, LASO-CMRR, E550
Stephen Fong, LASO-CMRR, E550
Everett Trollinger, LASO-CMRR, E550
Thomas Whitacre, LASO-CMRR, E550
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Thomas McKinney, ADPMSS, M984
Michael Mobley, SB-DO, E578
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Catherine A. Flavin, CMRR-DO, E550
CMRR O&AS Document Control, CMRR-DO, E550
CMRR Division Office, CMRR-DO, E550
Rh/tl/ctl

Nuclear Facility - COA

Activity ID	Activity Name	Original Duration	Start	Finish
Total		**169d**	**08-Jan-09 A**	**10-Sep-09**
COA: 1 LASO A Comments		**116d**	**03-Mar-09 A**	**10-Sep-09**
FDA1055a	LASO Issues Preliminary Safety Validation Report Rev. 0 (PSVR)	12d	16-Mar-09 A	14-Apr-09 A
FDA5960	COA #1 Complete	0d		07-Jul-09
FDA1055b	LASO Issues Preliminary Safety Validation Report Rev. 1 (PSVR)	5d	03-Sep-09	10-Sep-09
COA: 1.1 Natural Gas		40d	13-Apr-09	08-Jun-09
FDA2200	LASO and CMRR Project Team Determine Resolution for Natural Gas COA 1 Comments #2,#84	15d	13-Apr-09	01-May-09
FDA2210	Revise PDSA - Natural Gas "A" Comments	10d	04-May-09	15-May-09
FDA2220	LASO Review and Provide Comments - Natural Gas "A" Comments	10d	18-May-09	01-Jun-09
FDA2230	Incorporate Comments - Natural Gas "A" Comments	5d	02-Jun-09	08-Jun-09
FDA2240	Natural Gas "A" Comments Complete	0d		08-Jun-09
COA: 1.2 Elevator Accident DBA Complete		16d	13-Apr-09	04-May-09
FDA2250	Determine Path Forward - Elevator Accident DBA	2d	13-Apr-09	14-Apr-09
FDA2260	Revise PDSA - Elevator Accident DBA	2d	15-Apr-09	16-Apr-09
FDA2270	LASO Review and Provide Comments - Elevator Accident DBA	10d	17-Apr-09	30-Apr-09
FDA2280	Incorporate Comments - Elevator Accident DBA	2d	01-May-09	04-May-09
FDA2290	Elevator Accident DBA Complete	0d		04-May-09
COA: 1.3 MAR Control		35d	13-Apr-09	01-Jun-09
FDA2300	Determine Path Forward - MAR Control	10d	13-Apr-09	24-Apr-09
FDA2310	Revise PDSA - MAR Control	10d	27-Apr-09	08-May-09
FDA2320	LASO Review and Provide Comments - MAR Control	10d	11-May-09	22-May-09
FDA2330	Incorporate Comments - MAR Control	5d	26-May-09	01-Jun-09
FDA2340	MAR Control Complete	0d		01-Jun-09
COA: 1.4 Fire Analysis		60d	03-Mar-09 A	07-Jul-09
FDA2180	Comment Verification PFHA	8d	03-Mar-09 A	08-May-09
FDA2350	Determine Path Forward - Fire Analysis,FSS,FHA	15d	13-Apr-09	01-May-09
FDA2165	Determine Path Forward For Revision of NCAL-005	15d	13-Apr-09	01-May-09
FDA2160	Revise MCAL-038 Water Tank Sizing Basis	20d	13-Apr-09	08-May-09
FDA2170	Revise NCal-005 - Fire Calcs COA 1 #34	15d	04-May-09	22-May-09
FDA2900	Develop Matrix for Glovebox / Open Front / Fume Hood fire protection req.	5d	26-May-09	01-Jun-09
FDA2190	Finalize PFHA	10d	02-Jun-09	15-Jun-09
FDA2360	Revise PDSA - Fire Analysis,FSS,FHA	10d	02-Jun-09	15-Jun-09
FDA2195	Final Review of PFHA	5d	16-Jun-09	22-Jun-09
FDA2370	LASO Review and Provide Comments - Fire Analysis,FSS,FHA	10d	16-Jun-09	29-Jun-09
FDA2197	Incorporate Review Comments PFHA	5d	23-Jun-09	29-Jun-09
FDA2199	PFHA Complete	0d		29-Jun-09
FDA2380	Incorporate Comments - Fire Analysis,FSS,FHA	5d	30-Jun-09	07-Jul-09

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Activity ID	Activity Name	Original Duration	Start	Finish
FDA2390	Fire Analysis,FSS,FHA Complete	0d		07-Jul-09
COA: 1.5 Hydride In STV		45d	13-Apr-09	15-Jun-09
FDA2400	LASO and CMRR Determine Path Forward - Hydride Comments COA 1 - #96	20d	13-Apr-09	08-May-09
FDA2410	Revise PDSA - Hydride Comments COA 1 - #96	10d	11-May-09	22-May-09
FDA2420	LASO Review and Provide Comments - Hydride Comments COA 1 - #96	10d	26-May-09	08-Jun-09
FDA2430	Incorporate Comments - Hydride Comments COA 1 - #96	5d	09-Jun-09	15-Jun-09
FDA2440	Hydride Comments COA 1 - #96 Complete	0d		15-Jun-09
COA: 1.6 GB Fire Analysis		50d	13-Apr-09	22-Jun-09
FDA2450	Determine Path Forward - R.Tell Fire Analysis	10d	13-Apr-09	24-Apr-09
FDA2455	Revise Calc SB-DO-08-56	15d	27-Apr-09	15-May-09
FDA2460	Revise PDSA - R.Tell Fire Analysis	10d	18-May-09	01-Jun-09
FDA2470	LASO Review and Provide Comments - R.Tell Fire Analysis	10d	02-Jun-09	15-Jun-09
FDA2480	Incorporate Comments - R.Tell Fire Analysis	5d	16-Jun-09	22-Jun-09
FDA2490	R.Tell Fire Analysis Complete	0d		22-Jun-09
COA: 1.7 Inerting vs O2		40d	13-Apr-09	08-Jun-09
FDA2495	CMRR Review PF-4 Safety System Selection for Glove Boxes	5d	13-Apr-09	17-Apr-09
FDA2500	Determine Path Forward - Inerting Vs O2	10d	20-Apr-09	01-May-09
FDA2510	Revise PDSA - Inerting Vs O2	10d	04-May-09	15-May-09
FDA2520	LASO Review and Provide Comments - Inerting Vs O2	10d	18-May-09	01-Jun-09
FDA2530	Incorporate Comments - Inerting Vs O2	5d	02-Jun-09	08-Jun-09
FDA2540	Inerting Vs O2 Complete	0d		08-Jun-09
COA: 1.8 Gas Delivery		35d	13-Apr-09	01-Jun-09
FDA2550	LASO, Merrick, and CMRR Determine Path Forward - Gas Delivery	10d	13-Apr-09	24-Apr-09
FDA2560	Revise PDSA - Gas Delivery	10d	27-Apr-09	08-May-09
FDA2570	LASO Review and Provide Comments - Gas Delivery	10d	11-May-09	22-May-09
FDA2580	Incorporate Comments - Gas Delivery	5d	26-May-09	01-Jun-09
FDA2590	Gas Delivery Complete	0d		01-Jun-09
COA: 1.9 Vault Cooling		47d	13-Apr-09	17-Jun-09
FDA2600	Determine Path Forward - Vault Cooling	2d	13-Apr-09	14-Apr-09
FDA2610	Revise PDSA to Incorporate TIPR Container Comments - Vault Cooling	30d	15-Apr-09	27-May-09
FDA2620	LASO Review and Provide Comments - Vault Cooling	10d	28-May-09	10-Jun-09
FDA2630	Incorporate Comments - Vault Cooling	5d	11-Jun-09	17-Jun-09
FDA2640	Vault Cooling Complete	0d		17-Jun-09
COA: 1.10 DBA Bounding		40d	13-Apr-09	08-Jun-09
FDA2650	Determine Path Forward - DBA Bounding	15d	13-Apr-09	01-May-09
FDA2660	Revise PDSA - DBA Bounding	10d	04-May-09	15-May-09
FDA2670	LASO Review and Provide Comments - DBA Bounding	10d	18-May-09	01-Jun-09
FDA2680	Incorporate Comments - DBA Bounding	5d	02-Jun-09	08-Jun-09
FDA2690	DBA Bounding Complete	0d		08-Jun-09

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Actual Level of Effort ▬▬▬ Remaining Work ◆ ◆ Milestone

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Activity ID	Activity Name	Original Duration	Start	Finish
COA: 1.11 DD Container		57d	13-Apr-09	01-Jul-09
FDA2700	LASO / Merrick / CMRR Determine Path Forward - DD Container	10d	13-Apr-09	24-Apr-09
FDA2710	Revise PDSA - DD Container	10d	28-May-09	10-Jun-09
FDA2720	LASO Review and Provide Comments - DD Container	10d	11-Jun-09	24-Jun-09
FDA2730	Incorporate Comments - DD Container	5d	25-Jun-09	01-Jul-09
FDA2740	DD Container Complete	0d		01-Jul-09
COA: 1.12 Loading Dock		27d	13-Apr-09	19-May-09
FDA2750	Determine Path Forward - Loading Dock SSC	2d	13-Apr-09	14-Apr-09
FDA2760	Revise PDSA - Loading Dock SSC	10d	15-Apr-09	28-Apr-09
FDA2770	LASO Review and Provide Comments - Loading Dock SSC	10d	29-Apr-09	12-May-09
FDA2780	Incorporate Comments - Loading Dock SSC	5d	13-May-09	19-May-09
FDA2790	Loading Dock SSC Complete	0d		19-May-09
COA: 1.13 Underground Fuel Storage		35d	13-Apr-09	01-Jun-09
FDA2800	LASO, S&L and CMRR Determine Path Forward - Underground Fuel Storage	10d	13-Apr-09	24-Apr-09
FDA2810	Revise PDSA - Underground Fuel Storage	10d	27-Apr-09	08-May-09
FDA2820	LASO Review and Provide Comments - Underground Fuel Storage	10d	11-May-09	22-May-09
FDA2830	Incorporate Comments - Underground Fuel Storage	5d	26-May-09	01-Jun-09
FDA2840	Underground Fuel Storage Complete	0d		01-Jun-09
COA: 1.14 Leak Protection Factor		35d	13-Apr-09	01-Jun-09
FDA2850	Determine Path Forward - LPF	10d	13-Apr-09	24-Apr-09
FDA2860	Revise PDSA - LPF	10d	27-Apr-09	08-May-09
FDA2870	LASO Review and Provide Comments - LPF	10d	11-May-09	22-May-09
FDA2880	Incorporate Comments - LPF	5d	26-May-09	01-Jun-09
FDA2890	LPF Complete	0d		01-Jun-09
COA: 2 LASO R Comments		55d	13-Apr-09	29-Jun-09
FDA5740	Revise SB-DO-CALC-08-042	15d	13-Apr-09	01-May-09
FDA5750	Revise Accident Analysis to Use LASO Directed Breathing Rate	15d	13-Apr-09	01-May-09
FDA5870	COA #2 Complete	0d		29-Jun-09
COA: 2.1 Natural Gas		35d	13-Apr-09	01-Jun-09
FDA4945	Determine Path Forward - Natural Gas	10d	13-Apr-09	24-Apr-09
FDA4950	Revise PDSA - Natural Gas	10d	27-Apr-09	08-May-09
FDA4960	LASO Review and Provide Comments - Natural Gas	10d	11-May-09	22-May-09
FDA4970	Incorporate Comments - Natural Gas	5d	26-May-09	01-Jun-09
FDA4980	Natural Gas Complete	0d		01-Jun-09
COA: 2.2 Language Consistency		22d	13-Apr-09	12-May-09
FDA5000	Revise PDSA - PDSA Language Consistency	10d	13-Apr-09	24-Apr-09
FDA5010	LASO Review and Provide Comments - PDSA Language Consistency	10d	27-Apr-09	08-May-09
FDA5020	Incorporate Comments - PDSA Language Consistency	2d	11-May-09	12-May-09
FDA5030	PDSA Language Consistency Complete	0d		12-May-09

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Actual Level of Effort ▬▬▬ Remaining Work ◆ ◆ Milestone

Activity ID	Activity Name	Original Duration	Start	Finish	2009 Apr	May	Jun	Jul	Aug	Sep
COA: 2.3 Performance Criteria		35d	13-Apr-09	01-Jun-09						
FDA5040	Determine Path Forward - Confirm Performance Criteria & Expand Chapter 4 Criteria	10d	13-Apr-09	24-Apr-09						
FDA5050	Revise PDSA - Confirm Performance Criteria & Expand Chapter 4 Criteria	10d	27-Apr-09	08-May-09						
FDA5060	LASO Review and Provide Comments - Confirm Performance Criteria & Expand Chapter 4 Criteria	10d	11-May-09	22-May-09						
FDA5055	Revise CRDB for Ch 4 Performance Criteria and Evaluations	10d	11-May-09	22-May-09						
FDA5070	Incorporate Comments - Confirm Performance Criteria & Expand Chapter 4 Criteria	5d	26-May-09	01-Jun-09						
FDA5080	Performance Criteria & Expand Chapter 4 Criteria Complete	0d		01-Jun-09						
COA: 2.4 HVAC		35d	13-Apr-09	01-Jun-09						
FDA5090	Determine Path Forward - HVAC Active (ACVS) vs Passive (PCVS)	10d	13-Apr-09	24-Apr-09						
FDA5100	Revise PDSA - HVAC Active (ACVS) vs Passive (PCVS)	10d	27-Apr-09	08-May-09						
FDA5110	LASO Review and Provide Comments - HVAC Active (ACVS) vs Passive (PCVS)	10d	11-May-09	22-May-09						
FDA5120	Incorporate Comments - HVAC Active (ACVS) vs Passive (PCVS)	5d	26-May-09	01-Jun-09						
FDA5130	HVAC Active (ACVS) vs Passive (PCVS) Complete	0d		01-Jun-09						
COA: 2.5 Assumption Protection		35d	13-Apr-09	01-Jun-09						
FDA5190	Determine Path Forward - Generate List of Assumptions Requiring Protection	10d	13-Apr-09	24-Apr-09						
FDA5200	Revise PDSA - Generate List of Assumptions Requiring Protection	10d	27-Apr-09	08-May-09						
FDA5210	LASO Review and Provide Comments - Generate List of Assumptions Requiring Protection	10d	11-May-09	22-May-09						
FDA5220	Incorporate Comments - Generate List of Assumptions Requiring Protection	5d	26-May-09	01-Jun-09						
FDA5230	Generation Assumptions Requiring Protection Complete	0d		01-Jun-09						
COA: 2.6 Container Function Req		55d	13-Apr-09	29-Jun-09						
FDA5240	Determine Path Forward - Container Funct Req and Performance (TIPR)	10d	13-Apr-09	24-Apr-09						
FDA5250	Delete Language Specific to Containers from PDSA (CH 2-4)	10d	27-Apr-09	08-May-09						
FDA5251	Update Ch. 3 Safety Functions and Req. for Containers	20d	27-Apr-09	22-May-09						
FDA5252	Update Ch. 4 Tables for Containers	10d	26-May-09	08-Jun-09						
FDA5260	LASO Review and Provide Comments - Container Funct Req and Performance (TIPR)	10d	09-Jun-09	22-Jun-09						
FDA5270	Incorporate Comments - Container Funct Req and Performance (TIPR)	5d	23-Jun-09	29-Jun-09						
FDA5280	Container Funct Req and Performance (TIPR) Complete	0d		29-Jun-09						
COA: 2.7 Fire Calc		35d	13-Apr-09	01-Jun-09						
FDA5290	Determine Path Forward - Fire Calc / PFHA	10d	13-Apr-09	24-Apr-09						
FDA5300	Revise PDSA - Fire Calc / PFHA	10d	27-Apr-09	08-May-09						
FDA5310	LASO Review and Provide Comments - Fire Calc / PFHA	10d	11-May-09	22-May-09						
FDA5320	Incorporate Comments - Fire Calc / PFHA	5d	26-May-09	01-Jun-09						
FDA5330	Fire Calc / PFHA Complete	0d		01-Jun-09						

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Activity ID	Activity Name	Original Duration	Start	Finish	Apr	May	Jun	Jul	Aug	Sep
COA: 2.8 3B HA Tables		35d	13-Apr-09	01-Jun-09						
FDA5340	Determine Path Forward - Append 3B HA Tables	10d	13-Apr-09	24-Apr-09						
FDA5350	Revise PDSA - Append 3B HA Tables	10d	27-Apr-09	08-May-09						
FDA5360	LASO Review and Provide Comments - Append 3B HA Tables	10d	11-May-09	22-May-09						
FDA5370	Incorporate Comments - Append 3B HA Tables	5d	26-May-09	01-Jun-09						
FDA5380	Append 3B HA Tables Complete	0d		01-Jun-09						
COA: 3 Process Hazards Analysis		108d	08-Jan-09 A	15-Jun-09						
HA7000	Process Hazards Analysis Resource Loaded Schedule Complete	0d		08-Jan-09 A						
HA7045c	Prepare Hazards Analysis Table for Large Vessel	30d	09-Jan-09 A	27-Feb-09 A						
HA7010	Process Hazards Analysis Approval to Start	0d	12-Jan-09 A							
HA7005	Process Hazards Analysis Procedure & Template Approved	0d		20-Jan-09 A						
HA7020a	Prepare Description/Hazards ID for Sample Management, Residue Disposition	15d	20-Jan-09 A	18-Mar-09 A						
HA7030a	Prepare Description/Hazards ID for Non-Destructive Testing (NDA)	15d	20-Jan-09 A	27-Mar-09 A						
HA7025a	Prepare Description/Hazards ID for Materials Management, MTS, Waste Management	15d	20-Jan-09 A	17-Apr-09						
HA7035a	Prepare Description/Hazards ID for Materials Characterization	9d	30-Jan-09 A	19-Mar-09 A						
HA7045a	Prepare Description/Hazards ID for Large Vessel	15d	02-Feb-09 A	20-Feb-09 A						
HA7015	Process Hazards Analysis MOU's Approved	0d		09-Feb-09 A						
HA7020c	Prepare Hazards Analysis Table Preliminary Sample Management, Residue Disposition	5d	10-Feb-09 A	18-Mar-09 A						
HA7030c	Prepare Hazards Analysis Table for Non-Destructive Testing (NDA)	5d	10-Feb-09 A	27-Mar-09 A						
HA7025c	Prepare Hazards Analysis Table for Materials Management, MTS, Waste Management	5d	10-Feb-09 A	17-Apr-09						
HA7035c	Prepare Hazards Analysis Table for Materials Characterization	5d	13-Feb-09 A	20-Mar-09 A						
HA7045b	Proj Mgmnt / SFE Engineering Review of Large Vessel	5d	03-Mar-09 A	17-Apr-09						
HA7030b	Project Mgmnt / SFE Engineer Review of Non-Destructive Testing (NDA)	5d	09-Mar-09 A	17-Apr-09						
HA7020b	Project Mgmnt / SFE Engineer Review of Preliminary Sample Management, Residue Disposition	5d	19-Mar-09 A	24-Apr-09						
HA7035b	Proj Mgmnt / SFE Engineer Review of Materials Characterization	6d	20-Mar-09 A	14-Apr-09						
HA7040a	Prepare Description/Hazards ID for Assay, Methods Development, Trace Elements,..	15d	30-Mar-09 A	17-Apr-09						
HA7055a	Prepare Description/Hazards ID for Short Term Vault	5d	30-Mar-09 A	17-Apr-09						

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Actual Level of Effort	Remaining Work ◆	◆ Milestone		

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HA7060a	Prepare Description/Hazards ID for Actinide Research & Development	15d	30-Mar-09 A	24-Apr-09
HA7025b	Project Mgmnt / SFE Engineer Review of Materials Management, MTS, Waste Management	5d	06-Apr-09 A	24-Apr-09
HA7050a	Prepare Description/Hazards ID for Long Term Vault	5d	13-Apr-09	17-Apr-09
HA7040c	Prepare Hazards Analysis Table for Assay, Methods Development, Trace Elements, ...	10d	13-Apr-09	24-Apr-09
HA7050c	Prepare Hazards Analysis Table Long Term Vault	10d	13-Apr-09	24-Apr-09
HA7055c	Prepare Hazards Analysis Table for Short Term Vault	10d	13-Apr-09	24-Apr-09
FDA1500	LASO/SB Division Office Concur w/ PDSA Revision Methods	0d		13-Apr-09
HA7035d	Prepare Final Draft of Materials Characterization	10d	15-Apr-09	28-Apr-09
HA7045d	Prepare Final Draft of Large Vessel	10d	20-Apr-09	01-May-09
HA7030d	Prepare Final Draft of Non-Destructive Testing (NDA)	10d	20-Apr-09	01-May-09
HA7060c	Prepare Hazards Analysis Table for Actinide Research & Development	10d	20-Apr-09	01-May-09
FDA2005	LASO/CMRR Determine Path Forward for PHAs Incorporation into the PDSA	10d	24-Apr-09*	07-May-09
HA7040b	Project Mgmnt / SFE Engineer Review of Assay, Methods Development, Trace Elements,...	5d	27-Apr-09	01-May-09
HA7050b	Project Mgmnt / SFE Engineer Review of Long Term Vault	5d	27-Apr-09	01-May-09
HA7055b	Project Mgmnt / SFE Engineer Review of Short Term Vault	5d	27-Apr-09	01-May-09
HA7020d	Prepare Final Draft of Sample Management, Residue Disposition	10d	27-Apr-09	08-May-09
HA7025d	Prepare Final Draft of Materials Management, MTS, Waste Management	10d	27-Apr-09	08-May-09
HA7035e	Review Final Draft of Materials Characterization	6d	28-Apr-09	05-May-09
HA7045e	Review Final Draft of Large Vessel	5d	04-May-09	08-May-09
HA7030e	Review Final Draft of Non-Destructive Testing (NDA)	5d	04-May-09	08-May-09
HA7060b	Project Mgmnt / SFE Engineer Review of Actinide Research & Development	5d	04-May-09	08-May-09
HA7040d	Prepare Final Draft of Assay, Methods Development, Trace Elements,...	10d	04-May-09	15-May-09
HA7050d	Prepare Final Draft of Long Term Vault	10d	04-May-09	15-May-09
HA7055d	Prepare Final Draft of Short Term Vault	10d	04-May-09	15-May-09
HA7035f	Approve Preliminary Hazards Analysis for Materials Characterization	6d	05-May-09	12-May-09
HA7020e	Review Final Draft of Sample Management, Residue Disposition	5d	11-May-09	15-May-09
HA7030f	Approve Preliminary Hazards Analysis for Non-Destructive Testing (NDA)	5d	11-May-09	15-May-09
HA7025e	Review Period Final Draft of Materials Management, MTS, Waste Management	5d	11-May-09	15-May-09
HA7045f	Approve Preliminary Hazards Analysis for Large Vessel	6d	11-May-09	18-May-09
HA7060d	Prepare Final Draft of Actinide Research & Development	10d	11-May-09	22-May-09
HA7020f	Approve Preliminary Hazards Analysis for Sample Management, Residue Disposition	5d	18-May-09	22-May-09

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Activity ID	Activity Name	Original Duration	Start	Finish
HA7025f	Approve Preliminary Hazards Analysis for Materials Management, MTS, Waste Management	5d	18-May-09	22-May-09
HA7040e	Review Final Draft of Assay, Methods Development, Trace Elements,..	5d	18-May-09	22-May-09
HA7050e	Review Final Draft of Long Term Vault	5d	18-May-09	22-May-09
HA7055e	Review Final Draft of Short Term Vault	5d	18-May-09	22-May-09
HA7040f	Approve Preliminary Hazards Analysis for Assay, Methods Development, Trace Elements,...	5d	26-May-09	01-Jun-09
HA7050f	Approve Preliminary Hazards Analysis for Long Term Vault	5d	26-May-09	01-Jun-09
HA7055f	Approve Preliminary Hazards Analysis for Short Term Vault	5d	26-May-09	01-Jun-09
HA7060e	Review Final Draft of Actinide Research & Development	5d	26-May-09	01-Jun-09
FDA2010	Revise Chapter 3 Tables/Text	15d	26-May-09	15-Jun-09
FDA2020	Revise Chapter 4 Safety Significant Controls	15d	26-May-09	15-Jun-09
FDA2030	Incorporate Control Descriptions in Chapter 2	15d	26-May-09	15-Jun-09
FDA2040	Revise Executive Summary	15d	26-May-09	15-Jun-09
HA7060f	Approve Preliminary Hazards Analysis for Actinide Research & Development	5d	02-Jun-09	08-Jun-09
HA7160	Process Hazards Analysis Complete - COA #3	0d		15-Jun-09
COA 4 Preliminary Criticality Safety Evaluations		**56d**	**13-Apr-09**	**30-Jun-09**
FDA2910	Review PCSE System Boundaries	10d	13-Apr-09	24-Apr-09
FDA2045	LASO/CMRR Determine Path Forward for PCSE Incorporation into the PDSA	10d	24-Apr-09*	07-May-09
FDA2050	Incorporate Safety Significant Control Revisions into Chapter 6	10d	18-May-09	01-Jun-09
FDA2060	Revise Chapter 3 Tables/Text	10d	02-Jun-09	15-Jun-09
FDA2080	Revise HA Tables/Text	5d	16-Jun-09	22-Jun-09
FDA2090	Revise Chapter 2 Safety Significant Controls	5d	16-Jun-09	22-Jun-09
FDA2100	Revise Executive Summary	5d	16-Jun-09	22-Jun-09
FDA2070	Revise Chapter 4 Tables/Text	11d	16-Jun-09	30-Jun-09
FDA5890	PFHA Complete	0d		29-Jun-09
FDA2920	COA #4 Complete	0d		30-Jun-09
COA 5 Glove Box Fire Propagation/Controls		**44d**	**13-Apr-09**	**12-Jun-09**
FDA1510	LASO & CMRR Determine Path Forward for Glovebox Train Fire Controls	24d	13-Apr-09	14-May-09
FDA1520	Revise PDSA	5d	15-May-09	21-May-09
FDA1530	LASO Review and Provide Comments	10d	22-May-09	05-Jun-09
FDA1540	Incorporate Comments	5d	08-Jun-09	12-Jun-09
FDA1550	COA #5 Complete	0d		12-Jun-09
COA 6 PDSA/SDD Consistency		**93d**	**13-Apr-09**	**21-Aug-09**
FDA1015a	Revise Systems Engineering Management Plan	10d	13-Apr-09	24-Apr-09
FDA1020a	Review F&OR, Vol 1, Rev 4 for Incorporation into Project Document	10d	13-Apr-09	24-Apr-09
FDA1030a	LASO Provide Comments for Configuration Management of NF Final Design to PDSA	10d	13-Apr-09	24-Apr-09
FDA1060a	Revise Project Engineering Execution Plan	10d	13-Apr-09	24-Apr-09

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Activity ID	Activity Name	Original Duration	Start	Finish
FDA1065a	S&L Develop Facility Design Description (FDD)	20d	13-Apr-09	08-May-09
FDA1015b	Systems Engineering Management Plan Out for Review	10d	27-Apr-09	08-May-09
FDA1020b	Generate Input into Appropriate Design Documents	10d	27-Apr-09	08-May-09
FDA1030b	Incorporate DOE Comments into Configuration Management of NF Final Design to PDSA	10d	27-Apr-09	08-May-09
FDA1060b	Send Project Engineering Execution Plan Out for Review	10d	27-Apr-09	08-May-09
FDA1015c	Comment Resolution of Systems Engineering Management Plan	10d	11-May-09	22-May-09
FDA1060c	Incorporate Comments into Project Engineering Execution Plan	10d	11-May-09	22-May-09
FDA1030c	Obtain DOE Approval of Configuration Management of NF Final Design to PDSA for Use	10d	11-May-09	22-May-09
FDA1065b	LANL Review FDD and Provide Comments	10d	11-May-09	22-May-09
FDA1030d	Issue Configuration Management of NF Final Design to PDSA for Use	2d	22-May-09	26-May-09
FDA1015d	Obtain Project Approval of Systems Engineering Management Plan	10d	26-May-09	08-Jun-09
FDA1020c	Issue Design Input Documents	10d	26-May-09	08-Jun-09
FDA1060d	Obtain Project Approval of Project Engineering Execution Plan	10d	26-May-09	08-Jun-09
FDA1065c	S&L Incorporate Comments - FDD	10d	26-May-09	08-Jun-09
FDA1065d	S&L - Submit Final FDD to LANL	0d		08-Jun-09
FDA1770	System Engineering Management Plan Complete	0d		08-Jun-09
FDA1020d	Convert Former F&OR into Successor Documents	10d	09-Jun-09	22-Jun-09
FDA1025a	Determine if Configuration Management Plan Needs to be Revised	10d	09-Jun-09	22-Jun-09
FDA1025b	Revise Configuration Management Plan	10d	23-Jun-09	07-Jul-09
FDA1025c	Send Configuration Management Plan Out for Review	10d	08-Jul-09	21-Jul-09
FDA1025d	Comment Resolution of Configuration Management Plan	10d	22-Jul-09	04-Aug-09
FDA1025e	Obtain Project Approval of Configuration Management Plan	10d	05-Aug-09	18-Aug-09
FDA1780	Config Management Plan Complete	0d		18-Aug-09
COA 5.001 13838-19?NF-SDD-001 Long Term Vault Material Movement System		68d	13-Apr-09	17-Jul-09
FDA2950	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09
FDA2960	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09
FDA2970	Resolve Design Team / Safety Basis Wording Discrepancies	10d	11-May-09	22-May-09
FDA2980	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	26-May-09	01-Jun-09
FDA2990	Revise SDD for SDIT Review	10d	02-Jun-09	15-Jun-09
FDA3000	Conduct SDIT Review	13d	16-Jun-09	02-Jul-09
FDA3010	Resolve SDIT Comments	10d	06-Jul-09	17-Jul-09
FDA3020	Issue SDD	0d		17-Jul-09
COA 5.003 CMRR-SDD-003 Long Term Vault Storage System		80d	13-Apr-09	04-Aug-09
FDA3910	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09
FDA3920	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09

Remaining Level of Effort   Actual Work   Critical Remaining W...
Actual Level of Effort   Remaining Work ◆   ◆ Milestone

Date Date 13-Apr-09

Activity ID	Activity Name	Original Duration	Start	Finish				2009				
					Apr	May	Jun	Jul	Aug	Sep	
FDA3930	Resolve Design Team / Safety Basis Wording Discrepancies	10d	28-May-09	10-Jun-09							
FDA3940	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	11-Jun-09	17-Jun-09							
FDA3950	Revise SDD for SDIT Review	10d	16-Jun-09	01-Jul-09							
FDA3960	Conduct SDIT Review	13d	02-Jul-09	21-Jul-09							
FDA3970	Resolve SDIT Comments	10d	22-Jul-09	04-Aug-09							
FDA3980	Issue SDD	0d		04-Aug-09							
COA: 6.009 13568-109NF-SDD-004 Short Term Vault Storage System		80d	13-Apr-09	04-Aug-09							
FDA3990	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09							
FDA4000	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09							
FDA4010	Resolve Design Team / Safety Basis Wording Discrepancies	10d	28-May-09	10-Jun-09							
FDA4020	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	11-Jun-09	17-Jun-09							
FDA4030	Revise SDD for SDIT Review	10d	18-Jun-09	01-Jul-09							
FDA4040	Conduct SDIT Review	13d	02-Jul-09	21-Jul-09							
FDA4050	Resolve SDIT Comments	10d	22-Jul-09	04-Aug-09							
FDA4060	Issue SDD	0d		04-Aug-09							
COA: 6.011 13568-109NF-SDD-011 Non-Potable Water System		68d	13-Apr-09	17-Jul-09							
FDA4070	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09							
FDA4080	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09							
FDA4090	Resolve Design Team / Safety Basis Wording Discrepancies	10d	11-May-09	22-May-09							
FDA4100	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	26-May-09	01-Jun-09							
FDA4110	Revise SDD for SDIT Review	10d	02-Jun-09	15-Jun-09							
FDA4120	Conduct SDIT Review	13d	16-Jun-09	02-Jul-09							
FDA4130	Resolve SDIT Comments	10d	06-Jul-09	17-Jul-09							
FDA4140	Issue SDD	0d		17-Jul-09							
COA: 6.035 13568-109NF-SDD-035 Deionized Water System		68d	13-Apr-09	17-Jul-09							
FDA4150	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09							
FDA4160	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09							
FDA4170	Resolve Design Team / Safety Basis Wording Discrepancies	10d	11-May-09	22-May-09							
FDA4180	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	26-May-09	01-Jun-09							
FDA4190	Revise SDD for SDIT Review	10d	02-Jun-09	15-Jun-09							
FDA4200	Conduct SDIT Review	13d	16-Jun-09	02-Jul-09							
FDA4210	Resolve SDIT Comments	10d	06-Jul-09	17-Jul-09							
FDA4220	Issue SDD	0d		17-Jul-09							
COA: 6.013 13568-109NF-SDD-013 Airborne Radiation Detection System		68d	13-Apr-09	17-Jul-09							
FDA4230	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09							
FDA4240	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09							
FDA4250	Resolve Design Team / Safety Basis Wording Discrepancies	10d	11-May-09	22-May-09							
FDA4260	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	26-May-09	01-Jun-09							
FDA4270	Revise SDD for SDIT Review	10d	02-Jun-09	15-Jun-09							
FDA4280	Conduct SDIT Review	13d	16-Jun-09	02-Jul-09							

Remaining Level of Effort   Actual Work   Critical Remaining W...
Actual Level of Effort   Remaining Work ◆   ◆ Milestone

Date Date 13-Apr-09

Activity ID	Activity Name	Original Duration	Start	Finish	Apr	May	Jun	Jul	Aug	Sep
FDA4290	Resolve SDIT Comments	10d	06-Jul-09	17-Jul-09						
FDA4300	Issue SDD	0d		17-Jul-09						
COA 6.015 13568-109NF-SDD-015 Criticality Detection System		93d	13-Apr-09	21-Aug-09						
FDA4310	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09						
FDA4320	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09						
FDA4330	Resolve Design Team / Safety Basis Wording Discrepancies	10d	16-Jun-09	29-Jun-09						
FDA4340	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	30-Jun-09	07-Jul-09						
FDA4350	Revise SDD for SDIT Review	10d	08-Jul-09	21-Jul-09						
FDA4360	Conduct SDIT Review	13d	22-Jul-09	07-Aug-09						
FDA4370	Resolve SDIT Comments	10d	10-Aug-09	21-Aug-09						
FDA4380	Issue SDD	0d		21-Aug-09						
COA 6.017 13568-109NF-SDD-017 Nuclear Facility Laboratory Enclosure System		90d	13-Apr-09	18-Aug-09						
FDA4390	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09						
FDA4400	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09						
FDA4410	Resolve Design Team / Safety Basis Wording Discrepancies	10d	11-Jun-09	24-Jun-09						
FDA4420	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	25-Jun-09	01-Jul-09						
FDA4430	Revise SDD for SDIT Review	10d	02-Jul-09	16-Jul-09						
FDA4440	Conduct SDIT Review	13d	17-Jul-09	04-Aug-09						
FDA4450	Resolve SDIT Comments	10d	05-Aug-09	18-Aug-09						
FDA4460	Issue SDD	0d		18-Aug-09						
COA 6.019 13568-109NF-SDD-019 Fire Protection System		93d	13-Apr-09	21-Aug-09						
FDA4470	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09						
FDA4480	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09						
FDA4490	Resolve Design Team / Safety Basis Wording Discrepancies	10d	16-Jun-09	29-Jun-09						
FDA4500	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	30-Jun-09	07-Jul-09						
FDA4510	Revise SDD for SDIT Review	10d	08-Jul-09	21-Jul-09						
FDA4520	Conduct SDIT Review	13d	22-Jul-09	07-Aug-09						
FDA4530	Resolve SDIT Comments	10d	10-Aug-09	21-Aug-09						
FDA4540	Issue SDD	0d		21-Aug-09						
COA 6.021 13568-109NF-SDD-021 Uninterruptible Power Supply		90d	13-Apr-09	18-Aug-09						
FDA4550	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09						
FDA4560	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09						
FDA4570	Resolve Design Team / Safety Basis Wording Discrepancies	10d	11-Jun-09	24-Jun-09						
FDA4580	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	25-Jun-09	01-Jul-09						
FDA4590	Revise SDD for SDIT Review	10d	02-Jul-09	16-Jul-09						
FDA4600	Conduct SDIT Review	13d	17-Jul-09	04-Aug-09						
FDA4610	Resolve SDIT Comments	10d	05-Aug-09	18-Aug-09						
FDA4620	Issue SDD	0d		18-Aug-09						
COA 6.022 13568-109NF-SDD-022 Engine Generator System		78d	13-Apr-09	31-Jul-09						
FDA4630	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09						

Nuclear Facility - COA

Activity ID	Activity Name	Original Duration	Start	Finish
FDA4540	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09
FDA4650	Resolve Design Team / Safety Basis Wording Discrepancies	10d	26-May-09	08-Jun-09
FDA4660	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	09-Jun-09	15-Jun-09
FDA4670	Revise SDD for SDIT Review	10d	16-Jun-09	29-Jun-09
FDA4680	Conduct SDIT Review	13d	30-Jun-09	17-Jul-09
FDA4690	Resolve SDIT Comments	10d	20-Jul-09	31-Jul-09
FDA4700	Issue SDD	0d		31-Jul-09
COA: 5.028 13568-109NF-SDD-028 Vault HVAC System		80d	13-Apr-09	04-Aug-09
FDA4710	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09
FDA4720	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09
FDA4730	Resolve Design Team / Safety Basis Wording Discrepancies	10d	28-May-09	10-Jun-09
FDA4740	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	11-Jun-09	17-Jun-09
FDA4750	Revise SDD for SDIT Review	10d	18-Jun-09	01-Jul-09
FDA4760	Conduct SDIT Review	13d	02-Jul-09	21-Jul-09
FDA4770	Resolve SDIT Comments	10d	22-Jul-09	04-Aug-09
FDA4780	Issue SDD	0d		04-Aug-09
COA: 5.029 13568-109NF-SDD-029 Security Category I Building HVAC System		68d	13-Apr-09	17-Jul-09
FDA4790	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09
FDA4800	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09
FDA4810	Resolve Design Team / Safety Basis Wording Discrepancies	10d	11-May-09	22-May-09
FDA4820	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	26-May-09	01-Jun-09
FDA4830	Revise SDD for SDIT Review	10d	02-Jun-09	15-Jun-09
FDA4840	Conduct SDIT Review	13d	16-Jun-09	02-Jul-09
FDA4850	Resolve SDIT Comments	10d	06-Jul-09	17-Jul-09
FDA4860	Issue SDD	0d		17-Jul-09
COA: 5.030 13568-109NF-SDD-030 Auxiliary Building HVAC System		78d	13-Apr-09	31-Jul-09
FDA4870	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09
FDA4880	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09
FDA4890	Resolve Design Team / Safety Basis Wording Discrepancies	10d	26-May-09	08-Jun-09
FDA4900	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	09-Jun-09	15-Jun-09
FDA4910	Revise SDD for SDIT Review	10d	16-Jun-09	29-Jun-09
FDA4920	Conduct SDIT Review	13d	30-Jun-09	17-Jul-09
FDA4930	Resolve SDIT Comments	10d	20-Jul-09	31-Jul-09
FDA4940	Issue SDD	0d		31-Jul-09
COA: 5.031 SDD 13568-109NF-SDD-031 RLW		73d	13-Apr-09	24-Jul-09
FDA5760	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09
FDA5770	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09
FDA5780	Resolve Design Team / Safety Basis Wording Discrepancies	10d	18-May-09	01-Jun-09
FDA5790	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	02-Jun-09	08-Jun-09

Legend: Remaining Level of Effort, Actual Work, Critical Remaining W..., Actual Level of Effort, Remaining Work ◆, ◆ Milestone

Date Date 13-Apr-09

Activity ID	Activity Name	Original Duration	Start	Finish				2009			
					Apr	May	Jun	Jul	Aug	Sep	
FDA5800	Revise SDD for SDIT Review	10d	09-Jun-09	22-Jun-09							
FDA5810	Conduct SDIT Review	13d	23-Jun-09	10-Jul-09							
FDA5820	Resolve SDIT Comments	10d	13-Jul-09	24-Jul-09							
FDA5830	Issue SDD	0d		24-Jul-09							
COA 6.036 CMRR-SDD-036 Cat 1 Build		93d	13-Apr-09	21-Aug-09							
FDA3030	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09							
FDA3040	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09							
FDA3050	Resolve Design Team / Safety Basis Wording Discrepancies	10d	16-Jun-09	29-Jun-09							
FDA3060	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	30-Jun-09	07-Jul-09							
FDA3070	Revise SDD for SDIT Review	10d	08-Jul-09	21-Jul-09							
FDA3080	Conduct SDIT Review	13d	22-Jul-09	07-Aug-09							
FDA3090	Resolve SDIT Comments	10d	10-Aug-09	21-Aug-09							
FDA3100	Issue SDD	0d		21-Aug-09							
COA 6.037 CMRR-SDD-037 Vault Build		93d	13-Apr-09	21-Aug-09							
FDA3110	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09							
FDA3120	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09							
FDA3130	Resolve Design Team / Safety Basis Wording Discrepancies	10d	16-Jun-09	29-Jun-09							
FDA3140	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	30-Jun-09	07-Jul-09							
FDA3150	Revise SDD for SDIT Review	10d	08-Jul-09	21-Jul-09							
FDA3160	Conduct SDIT Review	13d	22-Jul-09	07-Aug-09							
FDA3170	Resolve SDIT Comments	10d	10-Aug-09	21-Aug-09							
FDA3180	Issue SDD	0d		21-Aug-09							
COA 6.038 13568-104HF-SDD-038 Aux Build		93d	13-Apr-09	21-Aug-09							
FDA3190	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09							
FDA3200	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09							
FDA3210	Resolve Design Team / Safety Basis Wording Discrepancies	10d	16-Jun-09	29-Jun-09							
FDA3220	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	30-Jun-09	07-Jul-09							
FDA3230	Revise SDD for SDIT Review	10d	08-Jul-09	21-Jul-09							
FDA3240	Conduct SDIT Review	13d	22-Jul-09	07-Aug-09							
FDA3250	Resolve SDIT Comments	10d	10-Aug-09	21-Aug-09							
FDA3260	Issue SDD	0d		21-Aug-09							
COA 6.039 13568-109HF-SDD-039 Inst Air/Comp Air		68d	13-Apr-09	17-Jul-09							
FDA3270	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09							
FDA3280	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09							
FDA3290	Resolve Design Team / Safety Basis Wording Discrepancies	10d	11-May-09	22-May-09							
FDA3300	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	26-May-09	01-Jun-09							
FDA3310	Revise SDD for SDIT Review	10d	02-Jun-09	15-Jun-09							
FDA3320	Conduct SDIT Review	13d	16-Jun-09	02-Jul-09							
FDA3330	Resolve SDIT Comments	10d	06-Jul-09	17-Jul-09							
FDA3340	Issue SDD	0d		17-Jul-09							

Remaining Level of Effort ▓▓▓ Actual Work ▓▓▓ Critical Remaining W...
Actual Level of Effort ☐☐☐ Remaining Work ◆ ◆ Milestone

Date Date 13-Apr-09

Activity ID	Activity Name	Original Duration	Start	Finish	2009 Apr	May	Jun	Jul	Aug	Sep
COA: 6.046 13565-109NF-SDD-046 Spec Gas		68d	13-Apr-09	17-Jul-09						
FDA3350	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09						
FDA3360	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09						
FDA3370	Resolve Design Team / Safety Basis Wording Discrepancies	10d	11-May-09	22-May-09						
FDA3380	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	25-May-09	01-Jun-09						
FDA3390	Revise SDD for SDIT Review	10d	02-Jun-09	15-Jun-09						
FDA3400	Conduct SDIT Review	13d	16-Jun-09	02-Jul-09						
FDA3410	Resolve SDIT Comments	10d	06-Jul-09	17-Jul-09						
FDA3420	Issue SDD	0d		17-Jul-09						
COA: 6.032 13565-109NF-SDD-032 Lab Wet Vac		73d	13-Apr-09	24-Jul-09						
FDA3430	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09						
FDA3440	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09						
FDA3450	Resolve Design Team / Safety Basis Wording Discrepancies	10d	18-May-09	01-Jun-09						
FDA3460	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	02-Jun-09	08-Jun-09						
FDA3470	Revise SDD for SDIT Review	10d	09-Jun-09	22-Jun-09						
FDA3480	Conduct SDIT Review	13d	23-Jun-09	10-Jul-09						
FDA3490	Resolve SDIT Comments	10d	13-Jul-09	24-Jul-09						
FDA3500	Issue SDD	0d		24-Jul-09						
COA: 6.045 13565-109NF-SDD-045 FMS		90d	13-Apr-09	18-Aug-09						
FDA3510	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09						
FDA3520	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09						
FDA3530	Resolve Design Team / Safety Basis Wording Discrepancies	10d	11-Jun-09	24-Jun-09						
FDA3540	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	25-Jun-09	01-Jul-09						
FDA3550	Revise SDD for SDIT Review	10d	02-Jul-09	16-Jul-09						
FDA3560	Conduct SDIT Review	13d	17-Jul-09	04-Aug-09						
FDA3570	Resolve SDIT Comments	10d	05-Aug-09	18-Aug-09						
FDA3580	Issue SDD	0d		18-Aug-09						
COA: 6.049 13565-109NF-SDD-049 MTS		93d	13-Apr-09	21-Aug-09						
FDA3590	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09						
FDA3600	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09						
FDA3610	Resolve Design Team / Safety Basis Wording Discrepancies	10d	16-Jun-09	29-Jun-09						
FDA3620	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	30-Jun-09	07-Jul-09						
FDA3630	Revise SDD for SDIT Review	10d	08-Jul-09	21-Jul-09						
FDA3640	Conduct SDIT Review	13d	22-Jul-09	07-Aug-09						
FDA3650	Resolve SDIT Comments	10d	10-Aug-09	21-Aug-09						
FDA3660	Issue SDD	0d		21-Aug-09						
COA: 6.057 13565-109NF-SDD-057 Real Time Radiography		68d	13-Apr-09	17-Jul-09						
FDA3670	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09						
FDA3680	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09						

Remaining Level of Effort ▬▬▬ Actual Work ▬▬▬ Critical Remaining W...
▬▬▬ Actual Level of Effort ☐☐☐ Remaining Work ◆ ◆ Milestone

Date Date 13-Apr-09

Activity ID	Activity Name	Original Duration	Start	Finish
FDA3690	Resolve Design Team / Safety Basis Wording Discrepancies	10d	11-May-09	22-May-09
FDA3700	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	26-May-09	01-Jun-09
FDA3710	Revise SDD for SDIT Review	10d	02-Jun-09	15-Jun-09
FDA3720	Conduct SDIT Review	13d	16-Jun-09	02-Jul-09
FDA3730	Resolve SDIT Comments	10d	06-Jul-09	17-Jul-09
FDA3740	Issue SDD	0d		17-Jul-09
COA: 6.069 CMPR-SDD-099 Fuel Oil System		68d	13-Apr-09	17-Jul-09
FDA3750	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09
FDA3760	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09
FDA3770	Resolve Design Team / Safety Basis Wording Discrepancies	10d	11-May-09	22-May-09
FDA3780	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	26-May-09	01-Jun-09
FDA3790	Revise SDD for SDIT Review	10d	02-Jun-09	15-Jun-09
FDA3800	Conduct SDIT Review	13d	16-Jun-09	02-Jul-09
FDA3810	Resolve SDIT Comments	10d	06-Jul-09	17-Jul-09
FDA3820	Issue SDD	0d		17-Jul-09
COA: 6.062 CMPR-SDD-062 Elec Power System		90d	13-Apr-09	18-Aug-09
FDA3830	Incorporate Chapter 4 Tables into CRDB	5d	13-Apr-09	17-Apr-09
FDA3840	Generate Comparison Report for PDSA Functions & Requirements	5d	20-Apr-09	24-Apr-09
FDA3850	Resolve Design Team / Safety Basis Wording Discrepancies	10d	11-Jun-09	24-Jun-09
FDA3860	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	25-Jun-09	01-Jul-09
FDA3870	Revise SDD for SDIT Review	10d	02-Jul-09	16-Jul-09
FDA3880	Conduct SDIT Review	13d	17-Jul-09	04-Aug-09
FDA3890	Resolve SDIT Comments	10d	05-Aug-09	18-Aug-09
FDA3900	Issue SDD	0d		18-Aug-09
COA: 6.777 Limited Volume Chilled Water System		88d	13-Apr-09	14-Aug-09
FDA5850	Develop Limited Vol Chilled Water System	30d	13-Apr-09	22-May-09
FDA5660	Incorporate Chapter 4 Tables into CRDB	5d	26-May-09	01-Jun-09
FDA5670	Generate Comparison Report for PDSA Functions & Requirements	5d	02-Jun-09	08-Jun-09
FDA5680	Resolve Design Team / Safety Basis Wording Discrepancies	10d	09-Jun-09	22-Jun-09
FDA5690	Finalize CRDB Language and Output PDSA Ch 4 Tables	5d	23-Jun-09	29-Jun-09
FDA5700	Revise SDD for SDIT Review	10d	30-Jun-09	14-Jul-09
FDA5710	Conduct SDIT Review	13d	15-Jul-09	31-Jul-09
FDA5720	Resolve SDIT Comments	10d	03-Aug-09	14-Aug-09
FDA5730	Issue SDD	0d		14-Aug-09
COA: 7 Dose Conversion Factor		39d	13-Apr-09	05-Jun-09
FDA1570	Revise PDSA	24d	13-Apr-09	14-May-09
FDA1580	LASO Review and Provide Comments	10d	15-May-09	29-May-09
FDA1590	Incorporate Comments	5d	01-Jun-09	05-Jun-09
FDA1600	COA #7 Complete	0d		05-Jun-09
COA: 8 Process for Linkage of Safety Function		80d	13-Apr-09	04-Aug-09

Remaining Level of Effort · Actual Work · Critical Remaining W...
Actual Level of Effort · Remaining Work ◆ · ◆ Milestone

Date Date 13-Apr-09

Nuclear Facility - COA

Activity ID	Activity Name	Original Duration	Start	Finish
FDA1610	Develop Process for Implementing DNFSB Finding #4	10d	13-Apr-09	24-Apr-09
FDA2930	Compile Hazards and Accident Analysis Data for Chapter 3 Linkage	10d	27-Apr-09	08-May-09
FDA2940	Revise Chapter 3 Tables of the PDSA	24d	11-May-09	12-Jun-09
FDA1620	Finalize Chapter 4 Tables of the PDSA (Follows COA #6)	5d	08-Jul-09	14-Jul-09
FDA1630	LASO Review Chapters 3&4	10d	15-Jul-09	28-Jul-09
FDA1640	Incorporate Comments in Chapters 3&4	5d	29-Jul-09	04-Aug-09
FDA1650	COA #8 Complete	0d		04-Aug-09
COA: 19 G4 Finalization		**21d**	**05-Aug-09**	**02-Sep-09**
FDA1710	Revise PDSA G4	5d	05-Aug-09	11-Aug-09
FDA1730	LASO/SB-DO Conformance Review	10d	12-Aug-09	25-Aug-09
FDA1740	Incorporate Changes from Conformance Review	5d	26-Aug-09	01-Sep-09
FDA5880	PDSA G4 Issued	1d	02-Sep-09	02-Sep-09
FDA1760	PDSA G-4 and Design Documents Approved COA #6 Complete	0d		02-Sep-09*

Remaining Level of Effort   Actual Work   Critical Remaining W...
Actual Level of Effort   Remaining Work ◆   ◆ Milestone

Date Date 13-Apr-09