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February 17, 2012

Mr. Victor McCree, Regional Administrator
U. S. Nuclear Regulatory Commission - Region II
Marquis One Tower
245 Peachtree Center Ave., NE, Suite 1200
Atlanta, Georgia 30303-1257

Subject: Duke Energy Carolinas, LLC
Oconee Nuclear Station (ONS), Units 1, 2 and 3
Renewed Facility Operating License Numbers DPR-38, -47, -55;
Docket Numbers 50-269, 50-270 and 50-287;
Standby Shutdown Facility Design Review Project Plan and Schedule

Reference: Duke Energy letter from T. Preston Gillespie to Victor McCree (Nuclear Regulatory Commission), ONS Standby Shutdown Facility and Bus Duct Studies, dated January 26, 2012

Dear Mr. McCree:

Per the referenced letter, Duke Energy Carolinas, LLC (Duke Energy) is submitting as the enclosure to this letter the Standby Shutdown Facility Design Review Project Plan and Schedule.

It should be noted that the project plan and the accompanying schedule, as submitted, represent Duke Energy's current plan of the performance of the SSF Design Review Project and a best estimate projection of its chronology. As project activities are undertaken, circumstances may dictate modifications to the project plan and schedule. As such, the project plan and the schedule are living documents that are subject to change.

This submittal document contains no regulatory commitments.

If there are any questions regarding this submittal, please contact Kent R. Alter of the ONS Regulatory Compliance Group at (864) 873-3255, or Lenny Azzarello of Duke Energy Nuclear Plant Development at (704) 382-8168.

Sincerely,

TPGillespie
T. Preston Gillespie, Jr., Vice President
Oconee Nuclear Station

Enclosure: Standby Shutdown Facility Design Review Project Plan and Schedule

U. S. Nuclear Regulatory Commission

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ENCLOSURE

Standby Shutdown Facility Design Review Project Plan and Schedule

PROJECT PLAN
COMPREHENSIVE DESIGN, LICENSING AND OPERATIONAL REVIEW OF THE OCONEE STANDBY SHUTDOWN FACILITY

FEBRUARY 15, 2012

TABLE OF CONTENTS

1.0 PURPOSE

This document is the project plan for the Comprehensive Design, Licensing and Operational Review of the Oconee Standby Shutdown Facility (SSF). It describes the purpose and scope of the review; the bases and guidance for performing the review; the project team composition and responsibilities; the schedule for the review; Oconee interfaces and responsibilities for supporting the review; anticipated field verification effort; review attributes; and reporting requirements.

2.0 OBJECTIVES

The objectives of the Comprehensive Design, Licensing and Operational Review are to:

- Determine if the SSF is currently designed, constructed, operated, maintained and tested to meet the requirements of the design and licensing bases
- Document any identified discrepancies in the corrective action program

3.0 SCOPE

The Standby Shutdown Facility (SSF) review is intended to be a comprehensive review, encompassing the licensing and design basis of the SSF through to implementing documents (e.g., calculations, specifications, procedures) starting from the initial licensing efforts. Thus, the project is similar to a design reconstitution effort.

This review is intended to go beyond the sampling process used during NRC inspections and licensee self assessments. This effort includes a review the design and licensing basis, maintenance and operational implementation, and appropriate implementation of corrective actions for internal and external operating experience (OE). Review emphasis is focused on ensuring that the SSF can perform its intended safety functions, i.e., determining if there are deficiencies that could defeat or encumber the ability of the SSF to perform its intended safety function under design basis conditions. To determine what functions need to be performed and when, a matrix will be constructed of SSF functions versus licensing and design basis events. This matrix will outline the systems and components needed to perform the intended functions and the assumptions and conditions under which the intended functions must be performed.

Field verification walkdowns are included for accessible SSCs to confirm that the actual plant configuration is consistent with the licensing and design basis.

The comprehensive design, licensing and operational review is intended to accomplish the following outcomes:

- Review and confirmation of the licensing basis;
- Review and confirmation of the existence and adequacy of the design basis documentation, including the safety classifications of SSCs;
- Review and confirmation that the actual plant configuration is in conformance with the licensing and design basis;
- Review and confirmation of test and maintenance records to confirm the adequacy of testing in determining performance capability under the applicable design basis conditions;

- Review and confirmation of emergency, abnormal, and normal operating procedures, specifically with respect to manual actions required for design basis scenarios;
- Review and confirmation of the adequacy and completeness of training packages related to the SSF;
- Review of Oconee and relevant industry operating experience records to ensure that applicable SSF issues were properly captured and dispositioned in Duke Energy's corrective action programs.

A project approach is being used to structure the review effort. Independence and objectivity of the review project is planned by having a team comprised primarily of non-Duke Energy, independent industry experts to perform the work. To ensure an independent regulatory perspective is applied to the project, primarily during the licensing basis review and interpretation, several industry experts with NRC work experience are being utilized.

As part of the creation of a project plan, a resource-loaded schedule is being developed for the Comprehensive Design, Licensing and Operational Review of the SSF. This project plan and schedule includes milestones and deliverables. A phased approach is planned to perform the review. This approach allows for scope evolution as initial project activities are performed. A completion date for the project will be determined when the detailed planning is complete. Based on the present scope, it is currently estimated that the project could take up to 15 months. As the project progresses, interim milestone deliverables will be made available for NRC review.

4.0 PROJECT APPROACH

4.1 General

The review is intended to be comprehensive, starting with an independent verification of the licensing and design basis, flowing through to the confirmation that facility configuration documents (e.g., design documents such as calculations and drawings, operating procedures, test and maintenance procedures) correctly implement the design and licensing basis, and confirming that the actual plant configuration is in accordance with the licensing and design basis, as well as the facility configuration documents. This approach is consistent with the industry configuration management model (see Appendix E), which illustrates how these three aspects of configuration management must remain aligned. Identified gaps and inconsistencies within and in-between these three aspects will be entered into the station's corrective action program. These tasks are sufficient by themselves for a reconstitution effort. However, the review is intended to continue beyond these activities; separately, operating experience and corrective action program documents will be reviewed to ensure issues related to the SSF have been appropriately dispositioned.

The project approach will include major steps as follows:

1. Review and confirmation of the licensing basis,
2. Review and confirmation of the design basis,
3. Review and confirmation that the facility configuration documents correctly implement the licensing and design basis,
4. Field verification walkdowns to confirm that the actual plant configuration is in accordance with the licensing and design basis, as well as the facility configuration documents,

5. Review of operating experience to ensure it is appropriately dispositioned, and
6. Review of issues identified in the corrective action program.

To guide the overall "re-constitution" effort and provide reasonable assurance that all aspects of the SSF are being thoroughly reviewed, a matrix approach is being used to map critical safety functions against the events for which the SSF is required to respond, per its licensing basis. Events identified by the licensing basis review, such as turbine building flood, fire and station blackout, will be reviewed for transient progression and the critical safety functions needed for mitigation by the SSF, within the requirements of the licensing basis (such as a requirement to maintain the plant at hot shutdown for a particular event). Critical safety functions needed for mitigation of a particular event, such as Reactor Coolant System inventory control and secondary side heat removal, will then be broken down into sub-functions, such as makeup, letdown and boundary control. Structures, systems and components (SSCs) necessary to perform the identified sub-functions (for example, a pump, a water source, flow isolation capability, a structural barrier) and the required attributes will then be identified and, ultimately, compared against actual plant design and documentation. In this manner, the design basis can be "re-constituted", and any gaps between 'what the requirements say should be there', 'what the paperwork says is there' and 'what is actually in the field' can be captured and entered into the station's corrective action program.

At various stages of the project (e.g., following development of the initial project plan and schedule), the project plan includes challenges from an Independent Review Team, as well as from Oconee site personnel. Such reviews are intended to improve or clarify aspects of the project such as the purpose, scope, and approach, as well as perform a review of the team's findings, conclusions and products.

4.2 Review of Licensing Basis

The current licensing basis (CLB) for the Standby Shutdown Facility (SSF) is intended to be re-constituted from licensing basis documents such as the FSAR, Technical Specifications (TSs), NRC correspondence, and other licensing documentation. The intent of this review is to confirm and clarify the CLB and identify any gaps or clarifications in the CLB that need to be addressed.

Initially, a manual search will be performed of all licensing documentation leading up to the April 1983 SER on the SSF. This manual search will serve as a self-study of a portion of the SSF licensing basis, providing an understanding of the early licensing history of the SSF. In addition, the manual search will serve to inform the creation of search criteria (such as key words and phrases, system and component designations, and SSF functions and events) for a more exhaustive, electronic search of post-SER licensing documentation.

As referred to in the initial phase of the licensing basis review, search tools will be developed to perform a more exhaustive, electronic search of licensing documentation. The effectiveness of the search criteria will be checked against focused manual searches to provide greater confidence that all licensing documentation is being accessed and considered. While the focus is primarily on Duke sources of documentation, searches will also be performed on external sources such as ADAMS and public document rooms. Once checked, the search criteria will be applied to post-SER licensing correspondence.

Licensing documents identified during various searches will be reviewed by licensing sub-team personnel and categorized to ultimately draw conclusions on, and re-constitute, the CLB. Additional tools will be developed to record and document potential licensing basis items, and provide traceability from the re-constituted CLB back to the supporting documentation. Any gaps identified will be entered into the station's corrective action program.

Products from this licensing review will provide input to the other project activities, such as the engineering sub-team's creation of a critical safety functions versus licensing and design events matrix.

4.3 Review of Engineering Design Basis

This portion of the project is intended to ensure that design documentation (e.g., calculations, drawings, specifications) comprehensively and accurately encompasses the licensing basis, as well as provide reasonable assurance that the SSF is able to perform its intended safety functions, as required by the licensing basis. To accomplish this objective, the design basis of the SSF will be re-constituted. Input from the licensing basis review will be utilized to establish the licensing requirements to be incorporated into the design basis. Ultimately, the review is intended to confirm that the design capability of the SSF systems, structures and components (SSCs) can accommodate the licensing basis requirements. A systematic approach to re-constituting the SSF design basis will be employed to ensure that this effort is independent and not influenced by any potential pre-existing design errors. Identified gaps in, or issues with, the design basis documentation will be entered into the station's corrective action program.

The first phase of this approach is the creation of a matrix of generic critical safety functions versus initiating events for pressurized water reactors (PWR). This generic PWR matrix will subsequently be reduced to an SSF-specific matrix. This reduction process will initially be based on the current licensing basis. Input from the licensing basis review portion of the project, as well as a critical review of Oconee design documents such as event mitigation calculations and SSF-related design basis documents, will be used to confirm the current licensing basis. Critical safety functions that are to be performed or supported by the SSF are the intended deliverable for this phase of the project.

Subsequent to the identification of SSF-specific critical safety functions, a set of sub-functions will be developed for each of these critical safety functions. These sub-functions further describe what is actually necessary to accomplish the SSF-specific critical safety functions. For example, the set of sub-functions necessary to accomplish the critical safety function of Reactor Coolant System Inventory Control might include reactor coolant system makeup, reactor coolant system letdown and reactor coolant system boundary control. The identification and development of the required sub-functions will be based on the knowledge and experience of the expert team members performing the review. The adequacy of the identified sub-functions for each critical safety function is intended to be confirmed by a critical review of Oconee design documents.

The next step in the process is to identify the SSCs necessary to perform the sub-functions, including the identification of the required design attributes. For example, the previous phase may have identified reactor coolant system makeup as a sub-function for the critical safety function Reactor Coolant System Inventory Control. To perform the makeup sub-function, the following SSCs would typically be necessary: a water source (such as a tank or pool), flow control capability (such as a control valve), motive force (such as a pump and electric motor), indication for the operator (such as flow and pressure instrumentation), etc. The design attributes for these SSCs might include seismic qualification or the specific temperature, pressure and steam and other environmental exposure conditions under which the SSC must perform its design function(s). The identification and development of the necessary SSCs, and their required design attributes, will be based on the knowledge and experience of the expert team members performing the review.

Once the required critical safety functions, required sub-functions and necessary SSCs, with required design attributes are indentified and developed, the actual design documentation will be critically reviewed to determine if it meets the aforementioned requirements. The design documents will be reviewed for adequacy using tools (such as predefined checklists) for each document type. These tools (e.g., checklists) will be developed early in the project to ensure that the reviews are consistent and sufficient to confirm the adequacy of the design documents. As previously mentioned, any identified gaps in, or issues with, the design documentation will be entered into the station's corrective action program.

4.4 Review of Operational Implementation

The intent of this portion of the project is to ensure that the operational (e.g.,, operations, maintenance, testing) implementation and support of SSF required functions accurately and completely implement the design and licensing basis. Additionally, training documentation will be reviewed to ensure that it provides an appropriate level of knowledge, skills, and abilities to operate and maintain the SSF for all licensing basis identified conditions. Reviews of the operational and training documents will be conducted using a pre-defined checklist for each document type. These tools (checklists) will be developed early in the project to ensure that the reviews are consistent and sufficient to confirm the adequacy of the documents.

The process for reviewing operational implementation begins with the identification of required systems, structures, components (SSCs) and operator actions that require operational support for implementation. Required SSCs include components such as pumps, motors, instrumentation, and flood barriers. Required operator actions include activities such as diesel generator starts, electrical breaker manipulation and pump flow throttling. These required SSCs and operator actions would typically be identified by the engineering design review and provided as input to the operational implementation review. However, input from the entire project team (including the licensing review team and the corrective action program and operating experience review team) will also be utilized to provide reasonable assurance of completeness.

When the required SSCs and operator actions are identified, the next step is to identify the activities necessary to adequately support operational implementation. These operational support activities include, but are not limited to, operator training and direction (to support required operator actions), surveillance testing and inspection, preventative maintenance and routine plant monitoring (to support SSC availability and reliability). Tools will be developed to support the consistent identification of operational implementation activities.

When operational implementation activities have been identified for required SSCs and operator actions, the next step is to identify operational implementation documents needed to support the aforementioned activities. These implementation documents include, but are not limited to, lesson plans and emergency operating procedures (to support operator training and direction), testing and surveillance procedures (to support surveillance testing and inspection), maintenance procedures, vendor manuals and operator rounds procedures (to support preventative maintenance and routine plant monitoring). Identified gaps in documentation will be entered into the station's corrective action program. Existing documentation to support operational implementation (the need for such having been identified in the previous process step) will then be reviewed to determine their adequacy to support the required operational implementation activities. This step includes, but is not limited to, the review of existing lesson plans, operations procedures, testing and surveillance procedures and maintenance procedures. Tools will be developed to support the consistent determination of documentation adequacy. Identified gaps will be entered into the station's corrective action program.

4.5 Review of Corrective Action Program and Operating Experience

This portion of the project will focus on a review of Corrective Action Program documents and operating experience related to the Standby Shutdown Facility (SSF).

The process will consist of the identification and gathering of the population of specific CAP documents (PIPs) that need to be reviewed to address potential SSF issues. This will consist of the project team members developing criteria for discriminating between SSF-related PIPs and non-SSF-related PIPs.

The PIPs identified in the previous phase of the process will be reviewed and, as appropriate, passed on to other project sub-teams to inform their sub-team activities, used to identify trends or gaps that will require further station resolution, or closed with no concern for the safe and compliant operation of the SSF. Tools (e.g., checklists) will be developed to perform the review of each PIP. Identified problems requiring station resolution will be entered into the station's corrective action program.

The operating experience review will begin with an identification of the various sources of operating experience that are available for station review and disposition. This effort will consist of project team members reviewing industry documentation (e.g., INPO, NEI, NUMARC, EPRI, Vendor, and NRC-generated information).

The next step in the operating experience review will be the identification and gathering of the population of operating experience documents that could result in potential SSF issues. This will consist of the project team member developing criteria for discriminating between SSF-related operating experience and non-SSF-related operating experience. Once the various operating experience documents have been identified, the team will retrieve the specific documents for review in preparation for the next phase of the operating experience review efforts.

The operating experience identified in the previous phase of this process will be reviewed and, as appropriate, passed on to other project sub-teams to inform their sub-team activities, document identified gaps in the application of the operating experience, or closed with no concern for the safe and compliant operation of the SSF. Tools (e.g., checklists) will be developed to perform the review of each operating experience document. Identified problems requiring station resolution will be entered into the station corrective action program.

4.6 Field Verification of Systems, Structures and Components

The intent of this portion of the project is to perform walkdowns of all accessible systems, structures and components (SSCs) to confirm that the actual plant configuration conforms to the facility configuration documentation, as well as the licensing and design basis. Expectations for the field verifications will be documented in tools (e.g., checklists) to ensure consistency and adequacy of the walkdowns.

Engineering-focused walkdowns will be performed to compare actual plant configuration against the engineering design basis documentation. For example, drawings will be used during walkdowns to verify the existence of various components in the field, their sequence in the flowpath, the existence of any temporary modifications and any physical anomalies from the intended design that could interfere with the performance of the design function. Engineering walkdowns will also take note of material condition issues and any other deviations from the expected configuration.

Operational-focused walkdowns will be performed to compare actual plant configuration against operations documentation, such as procedures, to confirm that the required operator actions can be performed within any required time frame (if applicable). Additional examples of walkdown objectives include the determination that the field configuration supports the ability of station personnel to adequately test, perform surveillance, maintain and monitor plant equipment per the operational implementation documentation. Operational walkdowns will also take note of any potential material condition issues, physical interferences or impediments, and operations or maintenance workarounds.

Any identified deviations or anomalies will be entered into the station's corrective action program.

4.7 Documentation of Issues Raised During the Project

As the project team performs its activities, numerous questions are expected to arise. These questions will be researched by gathering data pertaining to the particular question and interfacing with station personnel, as well as vetting the question through the project team. This effort is focused on determining if an answer to the question already exists. If an answer to a particular question is not readily identified, then an issue (or gap) should be entered into the station's corrective action program. The operability process will also be utilized, when and if appropriate. This approach is consistent with the criteria for entering issues into the Duke Energy Nuclear Generation Corrective Action Program (PIP) and the Operability Process. It is important to note that the speed at which resolution of a question is pursued will be a function of its risk importance and potential impact on plant safety. The project team has members who are well versed in Probabilistic Risk Assessment, as well as the appropriate regulatory perspective, to help ensure that the right focus is placed on any particular question or issue.

The project team will maintain an action tracking database for logging and tracking questions, and the activities underway to answer the question, with the ultimate resolution being a documented answer or an entry into the station's PIP Program.

4.8 Independent Review Team

An Independent Review Team will be formed to review various aspects of the project throughout the review. Such reviews are intended to improve or clarify aspects of the project such as the purpose, scope, and approach, as well as perform a review of the team's findings and products.

4.9 Oconee Site Review and Interface

The Oconee site review will be performed in several different ways at several different levels in the organization. Periodic communications on project status will be covered under the Communications Plan for Key Stakeholders. Site review of key project deliverables (such as licensing basis interpretations and positions) will be scheduled and presented as the schedule milestones for those deliverables are achieved. Daily Oconee site review of all Oconee related corrective action program entries will provide another method for reviewing SSF-related entries made by the project team.

The primary interface between the project team and station personnel will be through the Oconee Risk System Engineering Team. Members of this site team will be integrated into project team activities on a daily to weekly basis and have access to all project team in-progress documents. Members of this site team will also assist with obtaining input from other station personnel on project team activities (such as interviews) and coordinating any preparatory activities in anticipation of potential corrective actions.

5.0 COMMUNICATION INTERFACE WITH KEY STAKEHOLDERS

The project team will develop a communication plan for interfaces with key stakeholders (e.g., Oconee management, NGD senior leadership, and NRC).

The key stakeholders for the project are:

- Oconee Nuclear Station: Site Vice President, Organizational Effectiveness Manager, Station Manager (including Operations, Maintenance and Work Control direct reports), Engineering Manager (including Design Engineering, Systems Engineering and components and programs team members), Safety Assurance and Regulatory Compliance,
- Duke Energy Corporate: Chief Nuclear Officer, Senior Vice President Nuclear Operations, Vice President Nuclear Support, Nuclear Compliance Manager
- Duke Energy Nuclear Safety Review Board,
- NRC: Residents, Region II (including Engineering Branch and Division of Reactor Projects and Reactor Safety), NRR (including Projects and Engineering), Security and Incident Response Office,
- INPO,
- Oconee Major Projects: including the special project teams for Protected Service Water, HELB / Tornado, NFPA 805, external flooding, main steam isolation valves.

The communication plan will include desired protocols such as periodic interfaces (e.g., periodic phone calls, meeting updates, and/or written updates), as well as presentations as required. The plan will be finalized with the specific communication protocols to be used with specific stakeholders following discussions with the stakeholders to ensure expectations are clearly defined.

6.0 PROJECT TEAM ORGANIZATION AND STAFFING

The responsibilities for key project team members are discussed below. A simplified project organization chart is presented in Appendix B. This organization chart displays the primary focus areas of the project effort and is subject to change as the needs of the project team evolve over time. A list of team members is included in Appendix C. The team is comprised of both full-time and part-time members. The list of team members is also subject to change as the needs of the project team evolve over time.

Duke Management Leader

The overall Duke Energy Management team leader will be responsible for ensuring the scope and objectives of the project are consistent with Duke Energy senior leadership expectations and follow Duke Energy's processes for projects. This individual will be responsible for ensuring the project plan is clear and that resources are available to complete the plan. This individual will also set overall expectations for team interactions and communication of project progress and issues with key project stakeholders. This individual will also be the primary communicator with key project stakeholders.

Technical Team Leader

The Technical Team Leader will lead the day-to-day activities of the team to complete the project in accordance with the project plan. The Technical Team Leader will also be responsible for overseeing the preparation of the final report.

Team Members

Each team member is responsible for completing project activities within the assigned technical area. The team members perform the project activities (e.g., document reviews, personnel interviews, onsite observations of activities, and system walkdowns). Team members will work with Duke employees to ensure that issues and concerns are entered into Duke's corrective action program as appropriate. Team members will provide input to the project report.

Oconee Support

Oconee personnel will support the project team by providing access to requested documents and answering questions. Issues entered into the corrective action program will be assigned to and dispositioned by the Oconee team, not the project team.

7.0 PROJECT SCHEDULE

The project schedule will be developed during the first phase of the project, the detailed planning phase. The project schedule will be refined and revised as the project progresses. A copy of the project schedule is included in Appendix A.

8.0 PROJECT TEAM LOGISTICS

The project team will be based in the Nuclear General Office in Charlotte, with trips to Oconee as needed for walkdowns to verify actual plant configuration, interviews with plant personnel and communications with site and various external stakeholders.

Weekly project team meetings are planned. The primary objectives of the project team meeting are to provide a brief status of progress; identify and discuss potential or actual issues and their significance; identify plans for the coming week; and identify problems or needs impeding progress. Additional objectives are to provide technical and administrative information to team members.

Sub-team meetings (engineering design team, licensing team, operational team, etc.) will be held as needed. The technical details of issues under investigation are intended to be discussed in greater detail during these meetings.

Each sub-team will produce a weekly report of activities performed, issues being investigated and planned activities for submittal to the project manager at the end of each week. The project manager will compile the sub-team reports into a weekly project team report for review during the project team meeting. Each team member will provide brief report feeders covering their project activities. The purpose of the report feeders is to provide a means of efficiently communicating results (look back) and plans (look ahead).

9.0 PROJECT REPORT

The project team will produce a final report (with any supporting databases that may have been created) as a deliverable. The report is anticipated to consist primarily of an executive summary, a report body, appendices, and attachments.

The report body is anticipated to contain the project purpose, objectives, scope, the processes (or approach) used to perform the project, and any general findings and conclusions. Elements of the project plan will ultimately be incorporated into the body of the report.

It is currently envisioned that an appendix will be created for each event identified by the licensing basis is required to respond to. Examples of information anticipated to be included within each appendix are documents reviewed, licensing and design requirements applicable to the particular event, applicable operating experience and corrective actions, the aspects of the current licensing and design basis that can be confirmed, any gaps identified and the PIPs written to enter the gaps into the station's corrective action program, and any conclusions specific to the particular event.

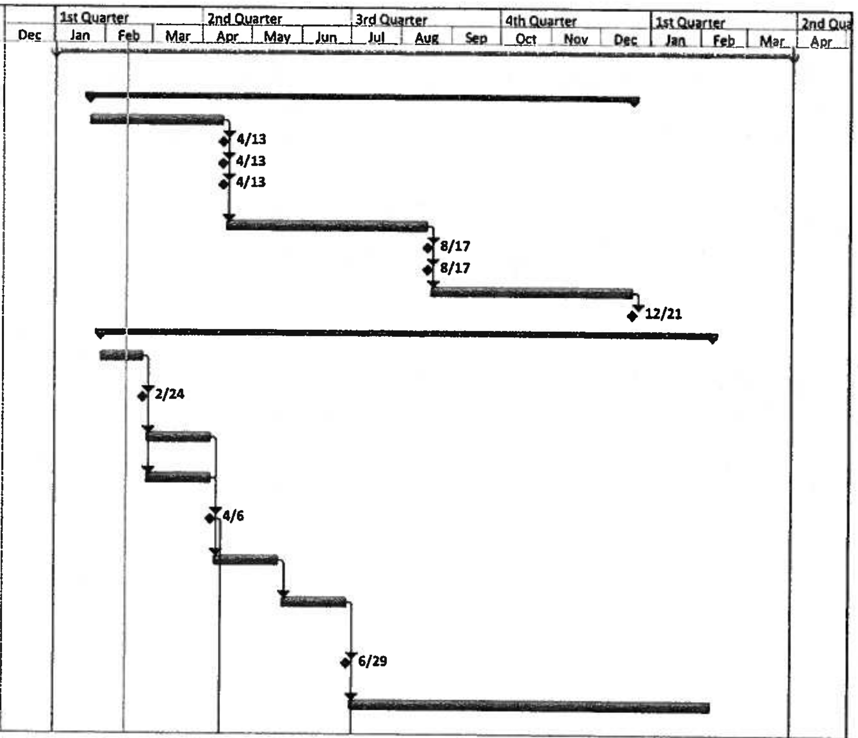
Attachments will be created for important information that is not specific to a particular event. Examples of information to be included as attachments are tools created to review specific types of documents and tools created to assist with field walkdowns.

Once the final report is completed, an executive summary will be included. The final report, including the executive summary, will then be given a unique identifier (similar to the handling of design studies) and placed into the nuclear electronic document library for retrievability.

Appendix A

Project Schedule

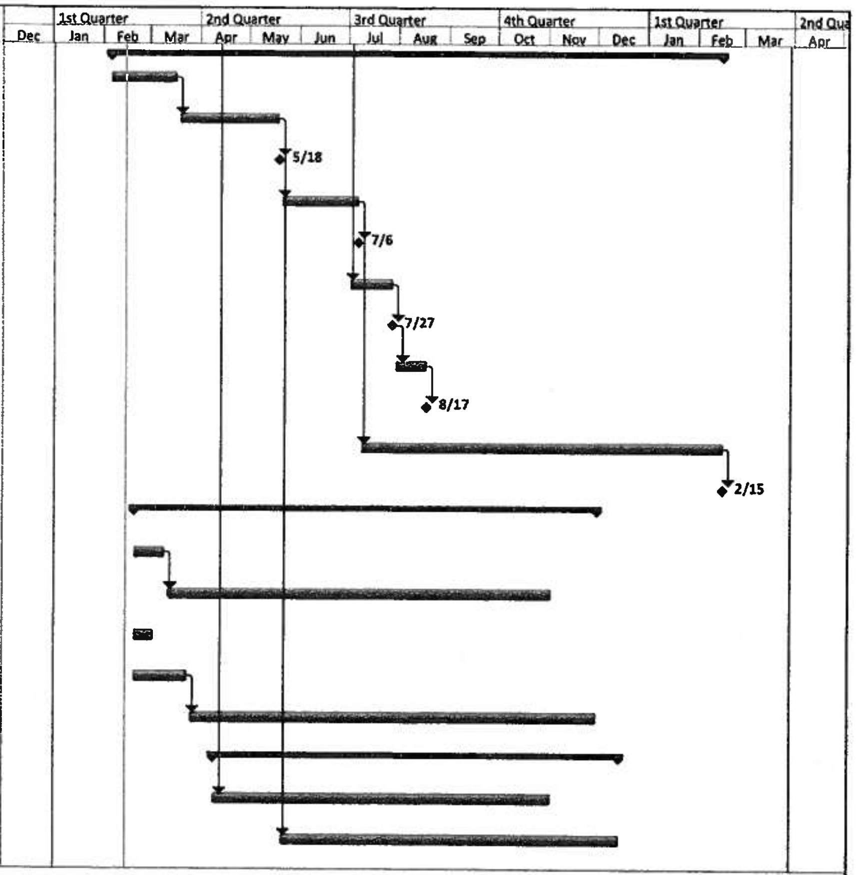
ID	Task Name	Duration	Start	Finish
0	**COMPREHENSIVE DESIGN, LICENSING AND OPERATIONAL REVIEW OF THE SSF**	**325 days**	**Mon 1/2/12**	**Fri 3/29/13**
1	**1 Licensing Basis Review**	**240 days**	**Mon 1/23/12**	**Fri 12/21/12**
2	1.1 Identify and Review Licensing Base documents prior to 1983	60 days	Mon 1/23/12	Fri 4/13/12
3	1.2 White Paper on Licensing Basis Prior to 1983	0 days	Fri 4/13/12	Fri 4/13/12
4	1.3 List of Licensing Basis documents prior to 1983	0 days	Fri 4/13/12	Fri 4/13/12
5	1.4 Criteria for searching licensing documents after 1983 that may have impact on the SSF Licensing Basis	0 days	Fri 4/13/12	Fri 4/13/12
6	1.5 Identify and Review Licensing Base documents post to 1983	90 days	Mon 4/16/12	Fri 8/17/12
7	1.6 White Paper on Licensing Basis Post 1983	0 days	Fri 8/17/12	Fri 8/17/12
8	1.7 List of Licensing Basis documents post to 1983	0 days	Fri 8/17/12	Fri 8/17/12
9	1.8 Independently determine SSF Licensing Basis	90 days	Mon 8/20/12	Fri 12/21/12
10	1.9 Documented Licensing Basis for SSF	0 days	Fri 12/21/12	Fri 12/21/12
11	**2 Design Basis (DB) Reviews**	**270 days**	**Mon 1/30/12**	**Fri 2/8/13**
12	2.1 Identify and Document Generic Set of Functions and Events - End Product Generic Matrix	20 days	Mon 1/30/12	Fri 2/24/12
13	2.2 Matrix Available Identifying Generic Set of functions vs. Events	0 days	Fri 2/24/12	Fri 2/24/12
14	2.3 Identify and Document Events for SSF Response	30 days	Mon 2/27/12	Fri 4/6/12
15	2.4 identify and Document Critical Safety Functions Required by SSF	30 days	Mon 2/27/12	Fri 4/6/12
16	2.5 Matrix Available identifying High Level Functions vs. Events - Needed for SSF	0 days	Fri 4/6/12	Fri 4/6/12
17	2.6 For each Critical Safety Function Identify and document Sub-Functions to ensure performance of CSF	30 days	Mon 4/9/12	Fri 5/18/12
18	2.7 Identify and Document Structures, Systems, and Components (SSCs) and Attributes necessary to perform the Sub-Functions identified in previous task.	30 days	Mon 5/21/12	Fri 6/29/12
19	2.8 Documented list of SSCs and attributes to perform functions and subfunctions	0 days	Fri 6/29/12	Fri 6/29/12
20	2.9 Compare Expected Design against actual design, Identify Gaps, and Document Results.	160 days	Mon 7/2/12	Fri 2/8/13



Project: COMPREHENSIVE DESIGN
Date: Wed 2/15/12

Task	Project Summary	Inactive Milestone	Manual Summary Rollup
Split	External Tasks	Inactive Summary	Manual Summary
Milestone ◆	External Milestone ◆	Manual Task	Start-only [
Summary	Inactive Task	Duration-only	Finish-only]
Deadline	Progress		

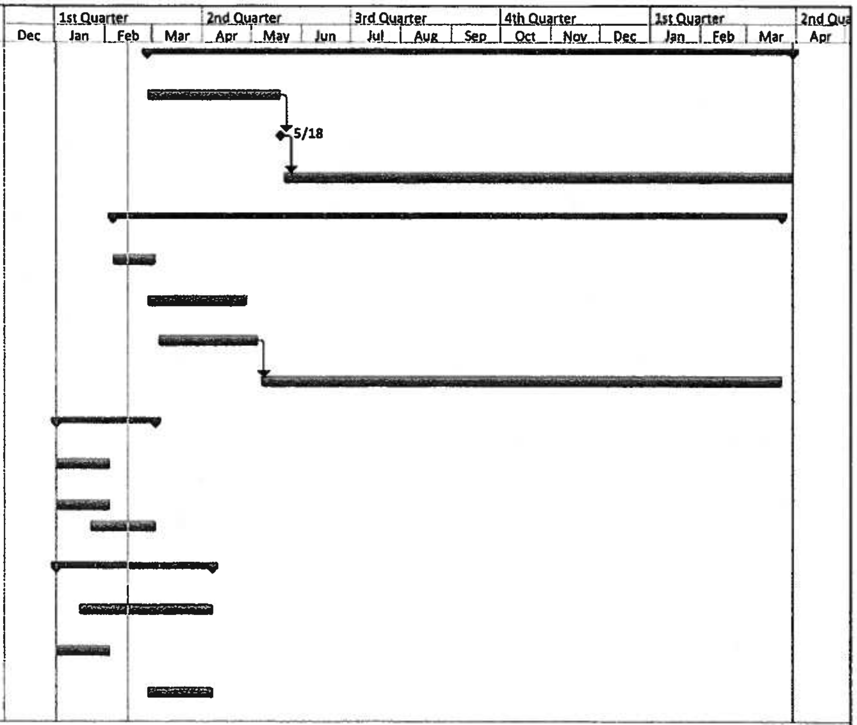
ID	Task Name	Duration	Start	Finish
21	**3 Operational Support**	**270 days**	**Mon 2/6/12**	**Fri 2/15/13**
22	3.1 Initial identification of SSCs requiring operational support based on Operational Team Review of SSF Related Documents	30 days	Mon 2/6/12	Fri 3/16/12
23	3.2 Identify activities necessary to support operational implementation.	45 days	Mon 3/19/12	Fri 5/18/12
24	3.3 Initial documented list of activities to support operational implementation of SSF	0 days	Fri 5/18/12	Fri 5/18/12
25	3.4 Determine if operational implementation documents exist to perform required activities as determined by Operational Team Review.	35 days	Mon 5/21/12	Fri 7/6/12
26	3.5 Preliminary White paper discussing operational implementation document gaps based on initial review by Operational Team	0 days	Fri 7/6/12	Fri 7/6/12
27	3.6 Identify activities necessary to support operational implementation based on new insights from Engineering Team.	20 days	Mon 7/2/12	Fri 7/27/12
28	3.7 Final documented list of activities to support operational implementation of SSF	0 days	Fri 7/27/12	Fri 7/27/12
29	3.8 Determine if additional operational implementation documents exist based on results from Engineering Team	15 days	Mon 7/30/12	Fri 8/17/12
30	3.9 Final White paper discussing operational implementation gaps based on Engineering and Operational Team Reviews	0 days	Fri 8/17/12	Fri 8/17/12
31	3.10 Determine if operational implementation documents are adequate to perform required activities.	160 days	Mon 7/9/12	Fri 2/15/13
32	3.11 White paper/input to Final Team Report results of operational reviews	0 days	Fri 2/15/13	Fri 2/15/13
33	**4 Corrective Action Program (CAP) and Operating Experience (OE)**	**205 days**	**Mon 2/20/12**	**Fri 11/30/12**
34	4.1 Identify the population of SSF relevant PIPs.	15 days	Mon 2/20/12	Fri 3/9/12
35	4.2 Perform and document review of PIPs (CAP documents)	170 days	Mon 3/12/12	Fri 11/2/12
36	4.3 Identify types of OE that need to be reviewed for applicability to SSF.	10 days	Mon 2/20/12	Fri 3/2/12
37	4.4 Identify the population of SSF relevant OE	25 days	Mon 2/20/12	Fri 3/23/12
38	4.5 Perform and document review of OE documents.	180 days	Mon 3/26/12	Fri 11/30/12
39	**5 Field Verification and Walkdowns**	**180 days**	**Mon 4/9/12**	**Fri 12/14/12**
40	5.1 Perform and document Engineering Focused Walkdowns	150 days	Mon 4/9/12	Fri 11/2/12
41	5.2 Perform and document Operational Focused Walkdowns	150 days	Mon 5/21/12	Fri 12/14/12



Project: COMPREHENSIVE DESIGN
Date: Wed 2/15/12

Task	▬	Project Summary	▬	Inactive Milestone	◇	Manual Summary Rollup	▬	Deadline	⇩
Split	┈┈┈	External Tasks	▬	Inactive Summary	▽	Manual Summary	▬	Progress	▬
Milestone	◆	External Milestone	◆	Manual Task	▬	Start-only	[		
Summary	▬	Inactive Task	▭	Duration-only	▭	Finish-only	]		

ID	Task Name	Duration	Start	Finish
42	**6 Independent Review of products, processes and overall project management**	**285 days**	**Mon 2/27/12**	**Fri 3/29/13**
43	6.1 Develop process(es) for performing the independent review efforts.	60 days	Mon 2/27/12	Fri 5/18/12
44	6.2 Process documents exist for independent reviews	0 days	Fri 5/18/12	Fri 5/18/12
45	6.3 Schedule and conduct independent review process.	225 days	Mon 5/21/12	Fri 3/29/13
46	**7 Communication Protocols**	**295 days**	**Mon 2/6/12**	**Fri 3/22/13**
47	7.1 Identify key stakeholders and interfaces	20 days	Mon 2/6/12	Fri 3/2/12
48	7.2 Develop communication protocols and expectations to be implemented with key stakeholders and interfaces	45 days	Mon 2/27/12	Fri 4/27/12
49	7.3 Develop communication plan	45 days	Mon 3/5/12	Fri 5/4/12
50	7.4 Implement communication plan for the project efforts.	230 days	Mon 5/7/12	Fri 3/22/13
51	**8 Team Organization and Staffing**	**45 days**	**Mon 1/2/12**	**Fri 3/2/12**
52	8.1 Determine Organization Structure Needed for Project	25 days	Mon 1/2/12	Fri 2/3/12
53	8.2 Obtain Initial Project Resources	25 days	Mon 1/2/12	Fri 2/3/12
54	8.3 Train Project Organization	30 days	Mon 1/23/12	Fri 3/2/12
55	**9 Project Team Logistics**	**70 days**	**Mon 1/2/12**	**Fri 4/6/12**
56	9.1 SharePoint Setup and Population	60 days	Mon 1/16/12	Fri 4/6/12
57	9.2 Develop Initial Meeting Protocols	25 days	Mon 1/2/12	Fri 2/3/12
58	9.3 Develop Project Metrics	30 days	Mon 2/27/12	Fri 4/6/12



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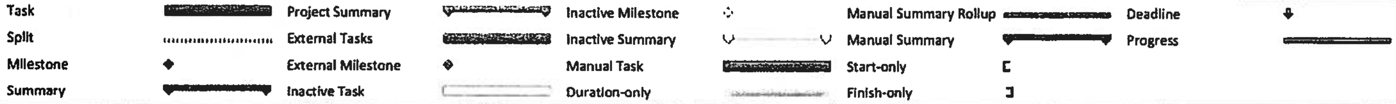
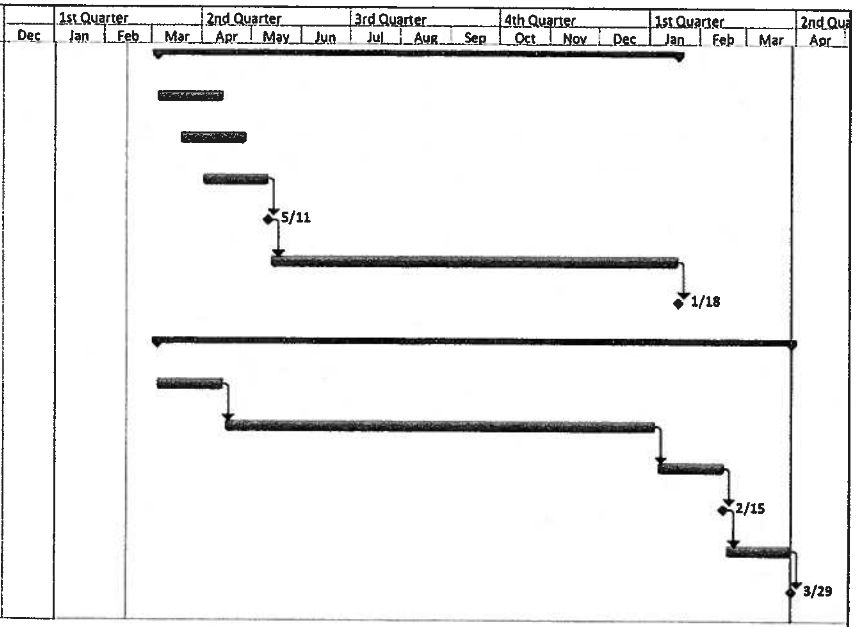


ID	Task Name	Duration	Start	Finish
59	**10 Security Reviews**	**230 days**	**Mon 3/5/12**	**Fri 1/18/13**
60	10.1 Identify and develop list of security activities related to SSF	30 days	Mon 3/5/12	Fri 4/13/12
61	10.2 Determine security implementation documents that should be in place to support security activities for SSF	30 days	Mon 3/19/12	Fri 4/27/12
62	10.3 Determine if implementation documents needed to support security activities exist and document any gaps.	30 days	Mon 4/2/12	Fri 5/11/12
63	10.4 Gaps with Security implementation documents are documented	0 days	Fri 5/11/12	Fri 5/11/12
64	10.5 work with Engineering and Operational Teams to ensure security activities are adequate.	180 days	Mon 5/14/12	Fri 1/18/13
65	10.6 Gaps in Security implementation activities are documented	0 days	Fri 1/18/13	Fri 1/18/13
66	**11 Final Team Report**	**280 days**	**Mon 3/5/12**	**Fri 3/29/13**
67	11.1 Develop Team Report Outline and assign Team Report sections to individual team members	30 days	Mon 3/5/12	Fri 4/13/12
68	11.2 Start inputting draft information into the sections that will be required for the final team report.	190 days	Mon 4/16/12	Fri 1/4/13
69	11.3 Consolidate the team sections into one report.	30 days	Mon 1/7/13	Fri 2/15/13
70	11.4 Draft Team Report Available for Review	0 days	Fri 2/15/13	Fri 2/15/13
71	11.5 Review and revise final report as required.	30 days	Mon 2/18/13	Fri 3/29/13
72	11.6 Final Team Report is in place	0 days	Fri 3/29/13	Fri 3/29/13

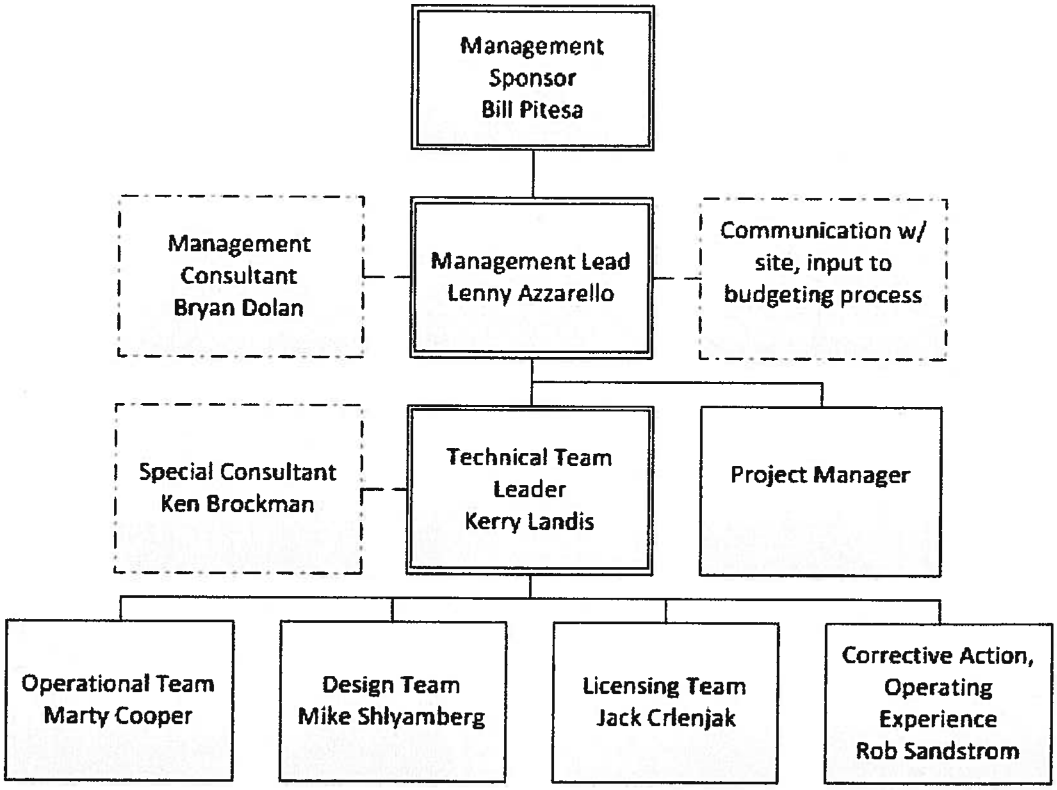


Project: COMPREHENSIVE DESIGN
Date: Wed 2/15/12

Task	▬	Project Summary	▬	Inactive Milestone	◇	Manual Summary Rollup	▬	Deadline	⇩
Split	┈	External Tasks	▬	Inactive Summary	⌴	Manual Summary	▬	Progress	▬
Milestone	◆	External Milestone	◆	Manual Task	▬	Start-only	[		
Summary	▬	Inactive Task	▭	Duration-only	▬	Finish-only	]		

Appendix B

Simplified Project Organization Chart



Appendix C

Project Team Members

Assessor's Name	Functional Responsibility	Company
Mr. Lenny Azzarello	Management Lead	Duke Energy
Mr. Kerry D. Landis	Team Leader	Landis Consulting, LLC
Mr. Bryan Dolan	Management Consultant	Synergoi, LLC
Mr. Kenneth E. Brockman	Independent Review Team and Security	Landis Consulting, LLC
Mr. Harold Eichenholz	Security SME	Landis Consulting, LLC
Mr. Mike Stinson	Security SME	Landis Consulting, LLC
Mr. Bill Subalusky	Independent Review Team Member, Operations	Landis Consulting, LLC
Dr. Omar S. Mazzoni (OSM)	Independent Review Team Member, Electrical	Nuenergy, Inc.
Dr. Hugh, D. Campbell (HDC)	Independent Review Team Member, Mechanical	Nuenergy, Inc.
Mr. Robert Sandstrom	PI&R SME Lead	Landis Consulting, LLC
Mrs. Nance Henry	PI&R Team Support	Landis Consulting, LLC
Mr. Robert (Bob) Schin	PI&R Team Support	Landis Consulting, LLC
Mr. William(Bill) Johnson	PI&R Team Support	Landis Consulting, LLC
TBD	PI&R Team Support	Landis Consulting, LLC
TBD	PI&R Team Support	Landis Consulting, LLC

Assessor's Name	Functional Responsibility	Company
Mr. Marty Cooper	Operations Lead Assessor (Ex-Ops Manager)	Landis Consulting, LLC
Mr. Ron Aiello	Operations Support	Landis Consulting, LLC
Mr. Larry Mellen	Operations Support	Landis Consulting, LLC
Mr. Robert (Bob) McPherson	Maintenance SME	Landis Consulting, LLC
Mr. Walt Rogers	PRA SME	Landis Consulting, LLC
Mr. Richard (Jack) V. Crlenjak (JC)	Lead Licensing Assessor	Nuenergy, Inc.
Mr. Gus Alberthal (GA)	Licensing Assessor	Nuenergy, Inc.
Mr. Gabor (Gabe) Salamon (GS)	Licensing Assessor	Nuenergy, Inc.
Mr. James (Jim) Raleigh	Licensing Assessor	Landis Consulting, LLC
Mr. Robert (Rob) Berryman	Licensing Assessor	Nuenergy, Inc.
Mr. Michael Shlyamberg (MS)	Design & Licensing Team Lead	Nuenergy, Inc.
TBD	Mechanical Assessor	Nuenergy, Inc.
TBD	Mechanical Assessor	Nuenergy, Inc.
Mr. Harold (Harry) Epstein (HE)	Electrical Assessor, EDG, General Electrical & EQ	Nuenergy, Inc.
Mr. Ladislau (Larry) Hajos (LH)	Electrical Assessor, General Electrical, & EQ	Nuenergy, Inc.
Mr. James (Jim) Leivo (JL)	I&C	Nuenergy, Inc.
Mr. Viktor Ivanov (VI)	I&C	Nuenergy, Inc.

Assessor's Name	Functional Responsibility	Company
Mr. Victor (Vic) P. Ferrarini (VPF)	Civil Structural	Nuenergy, Inc.
Ms. Fleurdeliza (Fleur) A. dePeralta (FdP)	Fire Protection	Nuenergy, Inc.
Mr. Thomas (Tom) J. Casey (TJC)	Fire Protection	Nuenergy, Inc.
Mr. Thomas D. Curtis (TDC)	SSF Subject Matter Expert	Nuenergy, Inc.
Mr. Gregg Swindlehurst	Thermal Hydraulic Analysis SME	G.S. Nuclear Consulting, LLC
Mr. Steve Nader	PRA & Mechanical SSF SME	ERIN Engineering and Research, Inc.

Appendix D

Critical Safety Function versus Event Matrix

	RCS Inventory Control	RCS Pressure Control	RCS Reactivity Control	RCS Pressure Boundary Control	Secondary Side Heat Removal	Independent Emergency AC Power	Security
Event A							
Event B							
Event C							
Event D							
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Event N							

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Appendix E

Industry Configuration Management Model