Nebraska Public Power District

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CNS Memo DED12-0003

To: Cooper Nuclear Station Licensing Department

From: Cooper Nuclear Station Design Engineering Department

CC: N/A

Date: 11/27/2012

Re: Response to 10 CFR 50.54(f) Section 2.3 Seismic

Validation and Acceptance of Vendor Provided Evaluations

The Great Tohoku Earthquake of March 11, 2011 and the resulting tsunami caused an accident at the Fukushima Dai-ichi nuclear power plant in Japan. In response to this accident, the Nuclear Regulatory Commission (NRC) established the Near-Term Task Force (NTTF), tasked with conducting a systematic and methodical review of NRC processes and regulations and determining if the agency should make additional improvements to its regulatory system. On March 12, 2012 the NRC issued a 10CFR50.54(f) Letter requesting information from all licensees to support the NRC staff's evaluation of several of the NTTF recommendations. To support NTTF 2.3, Enclosure 3 to the 50.54(f) Letter requested that all licensees perform seismic walkdowns to gather and report information from the plant related to degraded, non-conforming, or unanalyzed conditions with respect to its current seismic licensing basis.

The Electric Power Research Institute (EPRI), with support and direction from the Nuclear Energy Institute (NEI), published industry guidance for conducting and documenting the seismic walkdowns which represented the results of extensive interaction between NRC, NEI, and other stakeholders. This industry guidance document, EPRI Report 1025286, was formally endorsed by the NRC on May 31, 2012. Cooper Nuclear Station has committed to using this NRC-endorsed guidance as the basis for conducting and documenting seismic walkdowns for resolution of NTTF Recommendation 2.3: Seismic.

The product herein has been validated to adhere to EPRI Report 1025286 by Nebraska Public Power District and has been accepted at Cooper Nuclear Station as Memo DED12-0003.

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ZACHRY

ZNI Document Type: QAPD

Zachry Nuclear, Inc.

ENGINEERING EVALUATION
12-E18

COOPER NUCLEAR STATION SEISMIC WALKDOWN REPORT FOR RESOLUTION OF FUKUSHIMA NEAR-TERM TASK FORCE RECOMMENDATION 2.3: SEISMIC

REVISION 0

QA CLASSIFICATION: SAFETY RELATED

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Peer Review Lead:	Greg Hostetter (Tetra Tech)	11/27/12 Date

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REVISION HISTORY

Revision	Revision Description
0	Original Issue. Tom Driscoll prepared Section 5.0 "Selections of SSCs" and Attachment B. Section 9.0 "Peer Review" was prepared and independently verified by an outside source (Tetra Tech). This section was submitted to Zachry Nuclear, Inc. via the response to RFI 2892-001 (see Attachment H). All other sections were prepared by Clinton Morris. James McKinney was responsible for the IDV of all sections of the EE, except those provided by Tetra Tech as described above. The format of this EE was requested by CNS to be consistent with the format recommended by Reference 10.2. CNS requested that the Peer Review Lead sign the cover sheet of the report in accordance with the guidance provided by Reference 10.2. The Peer Review Lead has not been trained and is not required to be trained on the ZNE Engineering Evaluation procedure. The original submittal of this Engineering Evaluation to CNS was rejected due to the lack of color pictures in Attachments C and D. The Attachments have been changed to include color pictures. This document replaces in its entirety the Engineering Evaluation previously submitted, via Zachry Transmittal 016CPR/2892/D12083, on November 21, 2012. The IDV from the rejected Engineering Evaluation had only minor editorial comments, which is reflected in the updated IDV sheet in Attachment J. Therefore the IDV from the rejected Engineering Evaluation was not retained in the resubmittal.

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ATTACHMENTS

1.0 PURPOSE

The purpose of this report is to document the results of the seismic walkdown effort undertaken at Nebraska Public Power District's Cooper Nuclear Station (CNS) for resolution of Near-Term Task Force Recommendation 2.3: Seismic. The seismic walkdown effort was completed in accordance with the guidance provided by EPRI Report 1025286 [Ref 10.2]. Additionally, the purpose of this report is to provide the information necessary for responding to Enclosure 3 to the NRC issued 50.54(f) Letter [Ref. 10.1].

2.0 BACKGROUND

Following the accident at the Fukushima Dai-ichi nuclear power plant resulting from the March 11, 2011, Great Tohoku Earthquake and subsequent tsunami, the Nuclear Regulatory Commission (NRC) established the Near-Term Task Force (NTTF) in response to Commission direction. The NTTF issued a report that made a series of recommendations, some of which were to be acted upon "without unnecessary delay."

Subsequently, the NRC issued a 50.54(f) Letter [Ref. 10.1] that requests information to assure that these recommendations are addressed by all U.S. nuclear power plants. Every U.S. nuclear power plant is required to perform seismic walkdowns to identify and address degraded, non-conforming or unanalyzed conditions and to verify the current plant configuration with the current seismic licensing basis. The nuclear power industry and the NRC agreed to cooperate in the development of guidelines and procedures to perform these walkdowns.

The Electrical Power Research Institute (EPRI) issued the NRC endorsed Guideline 1025286, "Seismic Walkdown Guidance for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic" [Ref. 10.2] to assist the industry in responding to the NRC 50.54(f) Letter. The EPRI report provides guidance for conducting seismic walkdowns as required in the 50.54(f) Letter, Enclosure 3, Recommendation 2.3: Seismic.

The EPRI approach for addressing the actions and information requested in the 50.54(f) Letter includes the following activities, which are described in detail in the EPRI 1025286 sections shown in parentheses:

1. Assign personnel with appropriate qualifications (Section 2)
2. Select structures, systems and components (SSCs) to be evaluated (Section 3)
3. Perform Seismic Walkdowns and Area Walk-Bys (Section 4)
4. Evaluate potentially adverse seismic conditions with respect to the seismic licensing basis (Section 5)
5. Perform peer reviews (Section 6)
6. Report the actions taken to reduce or eliminate the seismic vulnerabilities identified by the Individual Plant Examination of External Events (IPEEE) program (Section 7)
7. Prepare submittal report (Section 8)

Nebraska Public Power District's Cooper Nuclear Station (CNS) has committed to conduct and document seismic walkdowns, in conjunction with Zachry Nuclear, Inc., for resolution of NTTF Recommendation 2.3: Seismic in accordance with the EPRI approach outlined above.

3.0 SEISMIC LICENSING BASIS

Class I is the designation used for structures, equipment, and components whose failure or malfunction might cause or increase the severity of an accident which would endanger the public health and safety. This includes those structures, equipment, and components required for safe shutdown and isolation of the reactor. The Class I structures at CNS are the reactor building (including the drywell and suppression chamber), control building, diesel generator building, intake structure, elevated release point, radwaste building and controlled corridor. The seismic design of Class I structures at CNS is described in Section XII and Appendix C of the USAR [Ref. 10.3]. A dynamic analysis was performed for Class I structures at CNS. The analysis consisted of four steps; a mathematical model was developed, the analysis was performed, structural response was obtained, and the spectra were plotted. Note that in 1986 the response spectra were regenerated [Ref. 10.17] to get plots with respect to frequency (original analysis plotted the results with respect to period). All basic inputs were the same, however the results were slightly different due to the differences in accuracy of these analyses.

3.1 DESIGN RESPONSE SPECTRA

To develop the design response spectra for CNS, idealized mass spring mathematical models were created for all Class I structures. These idealized mass spring mathematical models, which were used to represent actual structural systems, considered the mass of the system to be concentrated at discrete points connected by weightless linear elastic springs which simulate the stiffness of the actual structure. The stiffness of the actual structure was determined, accounting for flexural and shear effects.

The typical method of seismic analysis was the response spectra method of modal dynamic analysis. The time history modal analysis method was used to analyze those structures for which the response spectra method was considered inadequate and/or to develop seismic criteria (floor response spectra) for Class I equipment housed in Class I structures.

By either method, the equations of motion of a multi degree of freedom discrete mass damped system subjected to ground motion are uncoupled using the property of the orthogonality of natural mode shapes.

Using the response spectra method, maximum modal displacements and maximum modal inertia forces were obtained; the other modal quantities such as shears and moments were then computed for each mode by conventional structural analysis procedures. The individual modal maxima were generally combined by the root mean square method (square root of the sum of squares); if several controlling frequencies in an Eigenvalue solution were found to be close together the modal maxima were obtained by direct summation (sum of absolute values), or the system was analyzed by the time history method (which is, computationally, an exact method).

The results obtained from the response spectra modal analysis of Class I structures were checked for reasonableness and showed adequate conservatism.

To account for the effect on the floor response spectra due to the expected variations from the assumptions made for the structural properties, damping, soil structure interaction, etc., a shift of the peak responses of at least ±10% was considered (note that 15% was used for the 1986 analysis).

3.2 DESIGN CRITERIA FOR CLASS I STRUCTURES AND EQUIPMENT

The seismic design for Class I structures and equipment is based on dynamic analyses using acceleration response spectrum curves which are based on a ground motion of 0.1g, as shown in Figure II-5-7 and Figure II-5-8 of the CNS USAR [Ref. 10.3]. The Maximum Probable Design Earthquake, as referenced by Figure II-5-7 and Figure II-5-8, is the Operating Basis Earthquake (OBE). The combined stresses resulting from dead, live, pressure, thermal and earthquake loads having a ground acceleration of 0.2g are applied to Structures, Systems, and Components (SSCs) that are necessary to achieve safe shutdown. An earthquake having a ground acceleration of 0.2g is the Maximum Possible Design Earthquake, also known as the Safe Shutdown Earthquake (SSE), and the curves are shown in Figure II-5-9 and Figure II-5-10 of the CNS USAR.

For the design of Class I structures and equipment, the maximum horizontal and vertical accelerations were considered to occur simultaneously. Where applicable, stresses were added directly.

The Class I structures are designed to respond elastically, using normal allowable stresses without one third increase and the response spectra as shown in Figure II-5-7 and II-5-8 of the USAR (Figures 3-1 and 3-2, respectively, in this EE), which have been developed from the selected Operating Basis Earthquake.

The Class I structures have been designed using an ACI ultimate strength design and the response spectra as shown in Figures II-5-9 and II-5-10 of the USAR (Figures 3-3 and 3-4, respectively, in this EE), which have been developed from the selected hypothetical Safe Shutdown Earthquake.

The vertical OBE and SSE response spectra components are taken as two-thirds of the applicable horizontal response spectra components. The damping values used were 5% (OBE) and 7% (SSE) for concrete structures, and 2% (OBE and SSE) for steel frame structures. The ground input motion used in these analyses is described in USAR Section II 5.2.3.1. The N69W component of the July 21, 1952, earthquake recorded at Taft, California, as reported by the United States Coast and Geodetic Survey (page 100, Murphy and Cloud, 1954), was specified as an appropriate accelerogram for the station site. Since the N69W component has a recorded maximum acceleration of 0.157 gravity the accelerogram amplitude was multiplied by 0.100/0.157 to represent the horizontal component of the Operating Basis Earthquake (OBE).

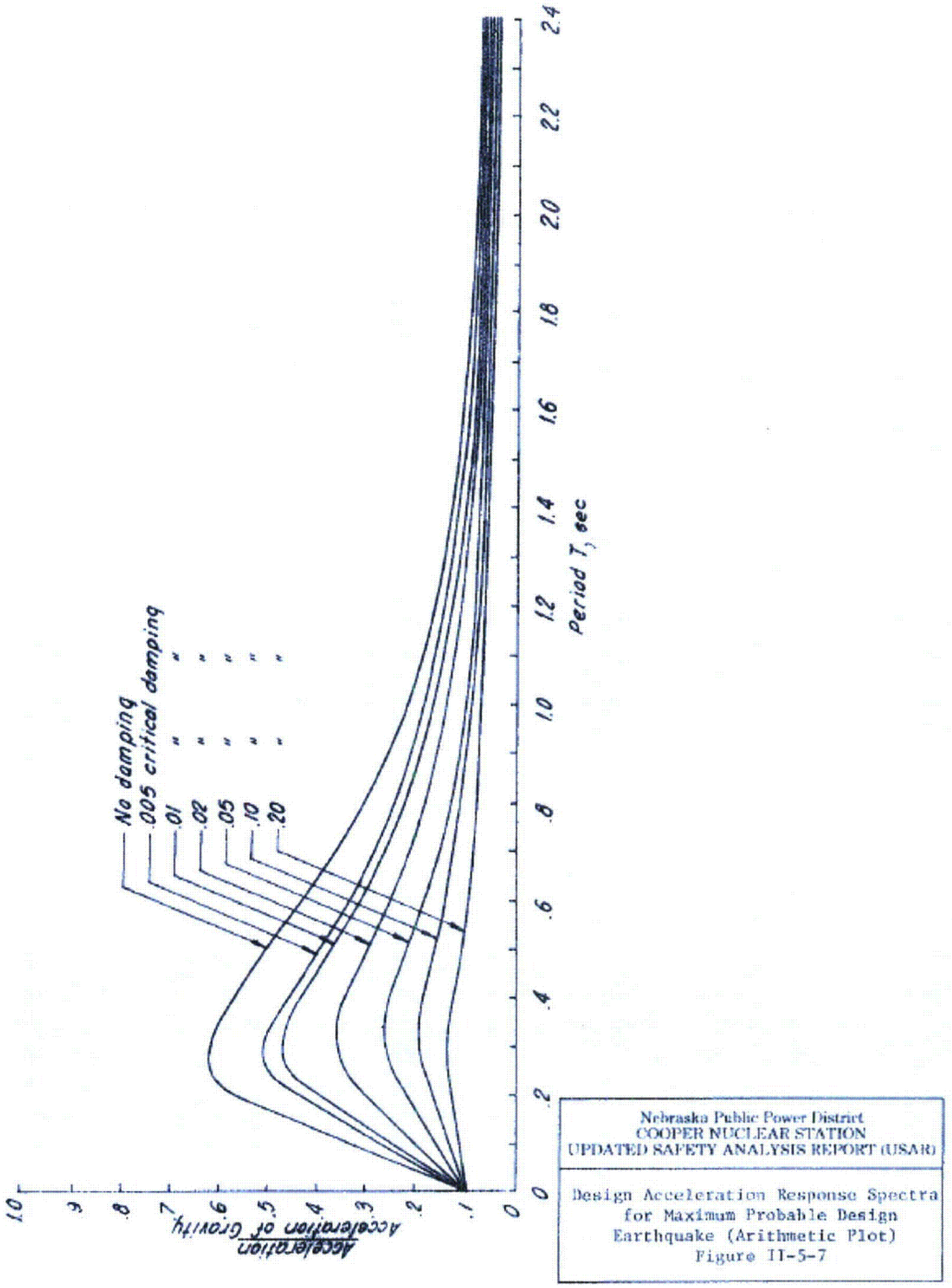


Figure 3-1 – OBE Design Acceleration Response Spectra

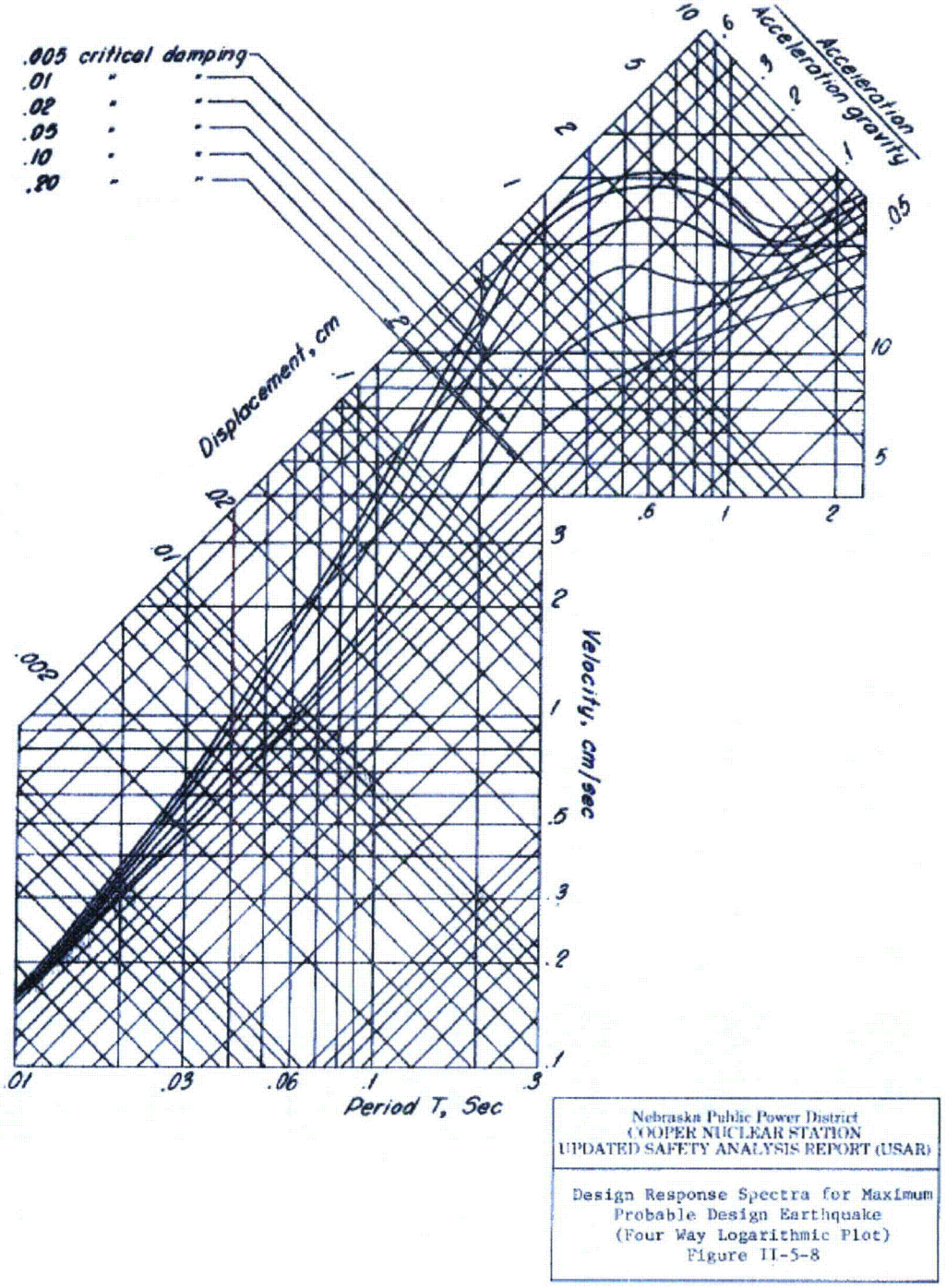


Figure 3-2 – OBE Design Response Spectra

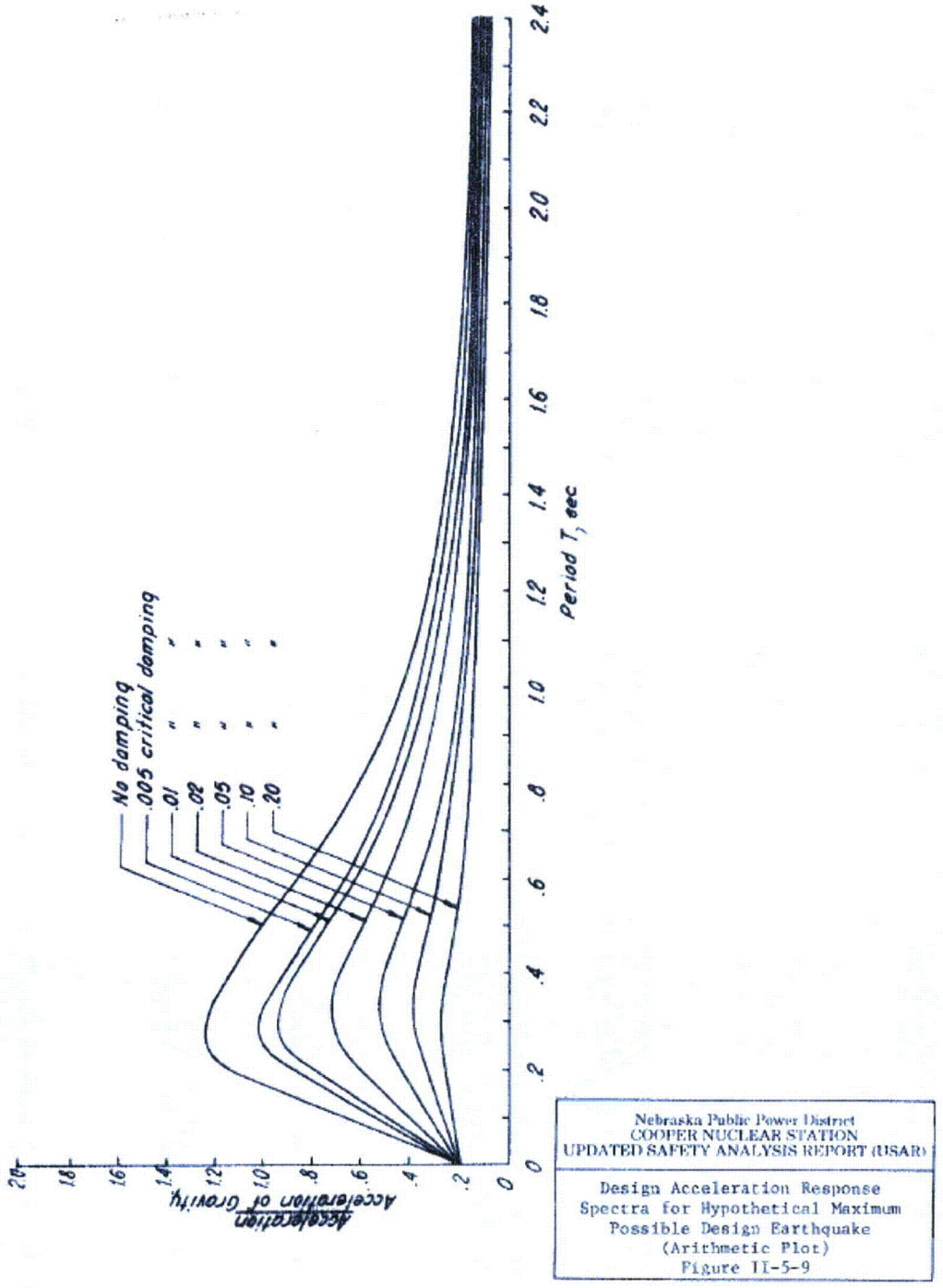


Figure 3-3 – SSE Design Acceleration Response Spectra

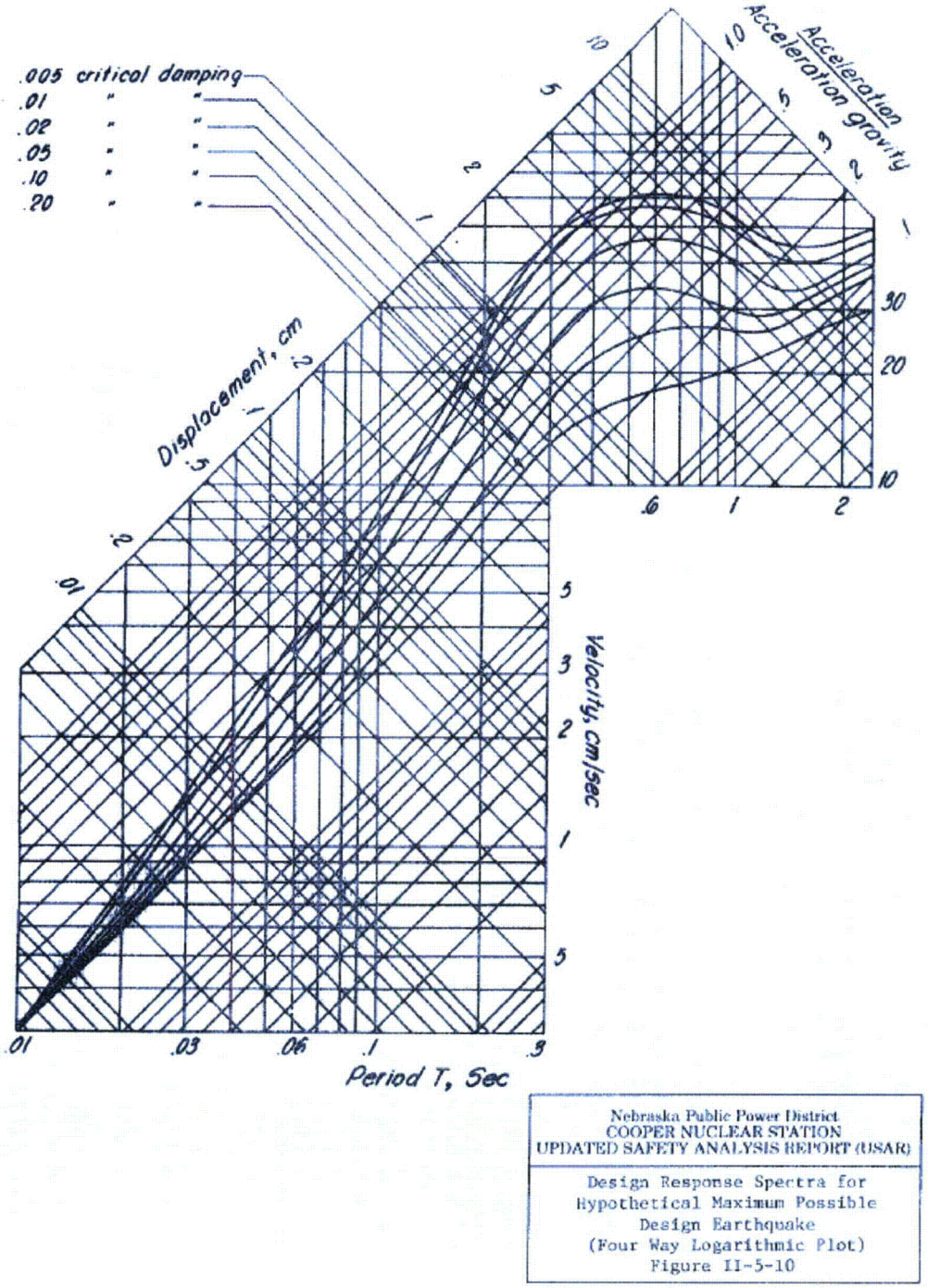


Figure 3-4 – SSE Design Response Spectra

3.3 PIPING

Seismic Class IS piping systems 2½" and greater in diameter were dynamically analyzed using the "response spectrum method" of analysis. For each of the piping systems, a mathematical model consisting of lumped masses at discrete joints connected together by weightless elastic elements was constructed. Valves were also considered as lumped masses in the pipe, and valve operators as lumped masses acting through the operator center of gravity. Where practical, a support was located on the pipe at or near each valve. Stiffness matrix and mass matrix were generated and natural periods of vibration and corresponding mode shapes were determined. Input to the dynamic analyses were the 0.5% damped acceleration response spectra for the applicable floor elevation. The increased flexibility of the curved segments of the piping systems was also considered. The results for earthquakes acting in the X and Y (vertical) directions simultaneously (combined by absolute summation), and Z and Y directions simultaneously (combined by absolute summation) were computed separately. The maximum responses of each mode were calculated and combined by the root mean square method to give the maximum quantities resulting from all modes (the response of closely spaced modes was combined by absolute summation). The response thus obtained was combined with the results produced by other loading conditions to compute the resultant stresses. For Seismic Class IS piping systems less than 2½" in diameter, as outlined by Appendix C, Section 3.3.3.2 of the CNS USAR, piping and supports were field routed using span and load chart tables.

3.4 APPLICABLE CODES

Table 3-1 includes a summary of the design codes used in the CNS design.

Table 3-1: CNS Summary of Design Codes

SSC/Activity	Design Code
Concrete Structures	ACI 318-63, Building Code Requirements for Reinforced Concrete, 1963
Steel Structures	AISC Manual of Steel Construction, 6th Edition, 1967
Piping	Replaced Class I: ASME III-1983, Subsection NB Non-Replaced Class I: ANSI B31.7-1969 Code Other: ANSI B31.1-1967 Code
Electrical Equipment	IEEE 344-1971 (original), earthquake experience data, or current IEEE 344-1975 requirements

4.0 PERSONNEL QUALIFICATIONS

Table 4-1 summarizes the names and responsibilities of personnel used to conduct the seismic walkdowns. For a summary of qualifications and experience, as well as seismic walkdown engineer training certificates, see Attachment A. For a list of the members on the Peer Review team, see Section 9.0: "Peer Review".

Table 4-1: Seismic Walkdown Personnel and Resposibilities

Name	Equipment Selection Personnel	Seismic Walkdown Engineer	Licensing Basis Reviewer	IPEEE Reviewer (See Note 1)
James McKinney (ZNE)		X		
William Price (ZNE)		X		
Tom Driscoll (ZNE)	X			
Justin Jackson (CNS)		X	X	
Mitch Marotz (CNS)		X	X	
Patrick Yearley (CNS)		X		

Notes:
1.) The IPEEE Reviewer column is left blank because no vulnerabilities were identified during the IPEEE program and therefore no reviews were required. For further discussion, see Section 8.0 "IPEEE Vulnerabilities Resolution Report".

5.0 SELECTION OF SSCs

The detailed guidance provided in EPRI Report 1025286 [Ref. 10.2], Section 3, was used to develop Seismic Walkdown Equipment Lists (SWELs) as follows:

- SWEL 1 provides a sampling of items to safely shut down the reactor and maintain containment integrity
- SWEL 2 provides a sampling of spent fuel pool related items

These lists are combined to form the SWEL, which defines the scope of equipment used as input to the Seismic Walkdowns (SWCs) and Area Walk-Bys (AWCs) in response to NRC 50.54(f) letter [Ref. 10.1]. A summary of the process used is provided below:

5.1 SWEL 1

The base equipment list used as a starting point for development of the SWEL 1 list was the Safe Shutdown Equipment List (SSEL) developed to address the NRC Unresolved Safety Issue (USI) A-46, "Seismic Qualification of Equipment in Operating Plants," as required by NRC Generic Letter 87-02 [Ref. 10.5] and expanded upon in the CNS IPEEE Program submittal [Ref. 10.12]. As stated in Reference 10.6, the guidance provided by the Generic Implementation Procedure (GIP) was used in compiling the safe shutdown

equipment list for CNS. The GIP [Ref. 10.14] approach is consistent with the EPRI Seismic Margins Assessment Program (SMA) described in EPRI report NP-6041 [Ref. 10.15].

The CNS SSEL included consideration of the following four safety functions:

- Reactor reactivity control
- Reactor coolant pressure control
- Reactor coolant inventory control
- Decay heat removal

EPRI Report 1025286 [Ref. 10.2] directs that in addition to the four safety functions listed above, the SWEL shall also include items that are associated with maintaining the following safety function:

- Containment function

The existing SSEL was reviewed by a licensed operator for updates that may be required as a result of safe shutdown flowpath changes since the list was initially developed.

The SSEL includes the frontline and support systems that are typically used to accomplish the four safety functions listed in Appendix B of EPRI NP-6041 [Ref. 10.15] and consists of all Safety Related (Essential) Seismic Category I components that comprise the frontline and support systems credited for Safe Shutdown. Many of the components on the SSEL are also used to accomplish the fifth safety function (containment function) listed in EPRI Report 1025286 [Ref. 10.2].

The SWEL 1 list was developed by applying the following five sample selection attributes, defined in EPRI Report 1025286, to the SSEL. The required size of the sample of equipment for the SWEL 1 list is 90-120 items, CNS chose 101 items. The method of application is summarized below and a CNS SWEL 1 development narrative is provided in Sections 5.3 and 5.4.

The Frequently Asked Questions (FAQs) on Seismic Walkdown Guidance issued on August 10, 2012 [Ref. 10.4] provides supplemental information on how to implement the Seismic Walkdown Guidance, which the NRC endorsed for implementing resolution of Fukushima Near-Term Task Force (NTTF) Recommendation 2.3: Seismic. The FAQ's were also used as guidance in developing the SWEL 1 list.

The process for selecting a sample of the SSCs for shutting down the reactor and maintaining containment integrity includes the following four screens:

5.1.1. SCREEN #1 – SEISMIC CATEGORY 1

This screen was used to narrow the scope of SSCs in the plant to those that are classified as Seismic Category (SC) I. This was done because only such items have a defined seismic licensing basis against which to evaluate the as-installed configuration. Selecting these items is intended to comply with the request in the NRC 50.54(f) Letter, under the "Requested Actions" section, to "verify current plant configuration with the current license basis."

5.1.2. SCREEN #2 – EQUIPMENT OR SYSTEMS

This screen narrowed the scope of SSCs by selecting only those that do not regularly undergo inspections to confirm that their configuration continues to be consistent with the plant licensing basis. Cable/conduit raceways and HVAC ductwork, although not included as "equipment" in the SWEL, were reviewed for potentially adverse seismic interactions with SWEL items during area walk-bys of the spaces containing items on the SWEL.

5.1.3. SCREEN #3 – SUPPORT FOR THE 5 SAFETY FUNCTIONS

This screen narrowed the scope of SSCs to be included in SWEL 1 to those associated with maintaining the five safety functions. These five safety functions include:

- Reactor reactivity control
- Reactor coolant pressure control
- Reactor coolant inventory control
- Decay heat removal (Including The Ultimate Heat Sink)
- Containment function

The first four functions are associated with bringing the reactor to a safe shutdown condition. The fifth function is associated with maintaining containment integrity.

Following the recommended approach, a list of equipment in various systems associated with these five safety functions was developed and SSCs were selected to provide a broad range of items over the associated systems.

5.1.4. SCREEN #4 – SAMPLE CONSIDERATIONS

This screen was intended to result in a SWEL 1 that sufficiently represents the broader population of plant equipment and systems needed to meet the objectives of the 50.54(f) Letter. The following five sample selection attributes were used:

a. A VARIETY OF TYPES OF SYSTEMS

Equipment from various types of systems was selected for the sample. The types of systems considered included frontline and support systems such as the types listed in EPRI Report 1025286 Appendix E: Systems to Support Safety Functions (extracted from Appendix B of EPRI NP-6041).

b. MAJOR NEW OR REPLACEMENT EQUIPMENT

A robust sampling of the major new or replacement equipment installed within the past 15 years (i.e., since the approximate completion of the seismic IPEEE evaluations) was selected for SWEL 1. This equipment would not have been included in the earlier IPEEE or USI A-46 programs.

c. A VARIETY OF TYPES OF EQUIPMENT

Various types of equipment were selected for the sample. This was accomplished by including at least one item from each of the classes of equipment listed in EPRI Report 1025286 Appendix B: Classes of Equipment.

d. A VARIETY OF ENVIRONMENTS

The equipment selected for the sample was from different locations in the plant that have different operating environments. For example, this could include equipment in environments that were dry and hot, wet and cold, mild and harsh, and inside and outside buildings.

e. EQUIPMENT ENHANCED DUE TO VULNERABILITIES IDENTIFIED DURING THE IPEEE PROGRAM

During the IPEEE program, plant-specific seismic vulnerabilities (including anomalies, outliers, or other findings) were identified. Some of the equipment identified in the IPEEE program was included in SWEL 1.

SWEL 1, taken as a whole, includes representative items containing variations within each of the above five attributes. Additionally, the development of SWEL 1 included consideration of the importance of the contribution to risk for the SSCs. For example, numerical measures derived from the available PRA models (internal or seismic), such as Fussell-Vesely Importance and Risk Achievement Worth, were used to determine potentially risk-significant SSCs.

5.2 SWEL 2

SWEL 2 was developed based on a review of systems associated with the Spent Fuel Pool (SFP) that are Seismic Category I or components whose failure could result in a rapid drain-down of the water level in the SFP to less than ten feet above the fuel.

For Seismic Category I systems associated with the SFP (if any), the sample of components were identified using the selection criteria described for SWEL 1. If there were no Seismic Category I systems associated with the SFP, no components were added to SWEL 2 and the basis for this result was identified.

Any components that could, upon failure, result in rapid drain-down of the SFP were identified and evaluated for addition to SWEL 2. If components were identified that met the criteria for inclusion in the seismic walkdowns, they were added to SWEL 2. If no component failures could result in rapid drain-down of the SFP, no components were added to SWEL 2 and the basis for this result was identified.

The process for selecting a sample of the SSCs associated with the Spent Fuel Pool (SFP) included the following four screens (Note the process for selecting SSCs using the first three screens listed below is similar to the approach described earlier for developing SWEL 1). The method of application is summarized below and a CNS SWEL 2 development narrative is provided in Sections 5.3 and 5.5.

5.2.1. SCREEN #1 -- SEISMIC CATEGORY I

This screen limited the items to those that have a seismic licensing basis.

5.2.2. SCREEN #2 -- EQUIPMENT OR SYSTEMS

This screen considered only those items associated with the Spent Fuel Pool that are appropriate for an equipment walkdown process.

5.2.3. SCREEN #3 -- SAMPLE CONSIDERATIONS

This screen was intended to result in a SWEL 2 that sufficiently represents a broad population of SFP Seismic Category I equipment and systems to meet the objectives of the NRC 50.54(f) Letter. Screen #3 considered the following four sample selection attributes that should be represented in SWEL 2:

- A variety of types of systems
- Major new and replacement equipment
- A variety of types of equipment
- A variety of environments

The number of equipment samples selected for SWEL 2 includes a much smaller number of items than for SWEL 1 because there are not as many systems and items of equipment associated with the Spent Fuel Pool as there are for bringing the plant to a safe shutdown condition and maintaining containment integrity.

5.2.4. SCREEN #4 -- RAPID DRAIN-DOWN

This screen identified items that could allow the Spent Fuel Pool (SFP) to drain rapidly. Based on typical designs of spent fuel pools at nuclear power plants, this scope of items were typically limited to hydraulic lines connected to the SFP and the equipment connected to those lines. The adequacy of the SFP structure is assessed by analysis as a Seismic Category I structure. Therefore, the SFP structure was assumed to be seismically adequate for the purposes of this program.

The SSCs that were identified were not limited to Seismic Category I items, but were limited to those that could allow rapid drain-down of the SFP. Rapid drain-down is defined as lowering the water level to the top of the fuel assemblies within 72 hours after the earthquake.

Determination of the potential for rapid drain-down included the following assessments:

- Determine whether there are SFP penetrations below about 10 feet above the top of the fuel assemblies. If there are no such penetrations, then no rapid drain-down items would be added to SWEL 2.
- For SFP penetrations below about 10 feet above the top of the fuel assemblies, an assessment of the potential for rapid drain-down from these lines was performed including the systems connected to them. If there were SFP penetrations below about 10 feet above the top of the fuel assemblies and a drain-down assessment was needed, the following was considered:
  - Determine how pool sloshing would reduce the initial volume of water in the Spent Fuel Pool during the seismic event.
  - The effect of the boil-off of water.
  - Mechanisms in which water is pumped out of the SFP were not considered.
  - Because gravity is the driving force, the minimum size of the leak path could be estimated for various elevations of penetrations located below about 10 feet above the top of the fuel assemblies.
  - In some instances, the SFP items associated with penetrations below about 10 feet above the top of the fuel assemblies were add to SWEL 2 in lieu of performing a drain-down assessment.
  - Any items identified as having the potential for rapidly draining the SFP were added to SWEL 2.

5.3 GENERAL SWEL DEVELOPMENT PROCESS FOR CNS

5.3.1. Interviewed Millstone personnel responsible for their SWEL

a. The Millstone SWEL is based on their SSEL

b. They distributed their SWEL SSCs by Class, System, and then location after the screening process was completed.

5.3.2. Incorporated key aspects of examples from:

a. Kewaunee, which was under NRC review

b. Millstone Units 2 & 3

c. Monticello

5.3.3. Incorporated Frequently Asked Questions (FAQ) from EPRI, which provided clarification to various requirements.

5.3.4. Acquired CNS SSEL in Excel format.

a. Rearranged Excel formatted to be consistent with examples

b. Added screening requirements to the SSEL tab

c. Added SWEL 1 and SWEL 2 tabs

d. Developed summary sheet tab

5.3.5. Populated the spreadsheet EPRI screening criterion with plant information that was not included in the A-46 and IPEEE program. Sources included references in Section 10 of this report and:

a. Design Criteria Document (DCD)

b. Plant Drawings (P&IDs, Isometrics, General Arrangement)

c. CNS Redback

d. Engineering Judgment

5.3.6. Targeted number of SWEL 1 items from approximately 400 SSEL items

a. Typical industry SWEL 1 selection is 100 items, CNS requested 101

b. Summary sheet determined "target" number of Class, System, and then Location based on the ratio of targeted SSCs (101) compared to the total SSCs (402) on the SSEL (approximately 25%).

5.3.7. Targeted number of SWEL 2 items was 6 to be consistent with the industry.

5.3.8. Manually chose SSCs until Class, System, Location (Building and Elevation) was reasonably close to their targeted number.

a. This ensured the diversity requirement was met.

b. The remaining attributes were adequately distributed (sufficient anchorage points, Safety Functions, Risk, etc.)

5.3.9. Per EPRI, CNS Operations reviewed the list and provided feedback. Some original SWEL selections were replaced due to environmental and operational conditions that are unreasonable for personnel to enter.

5.4 CNS RESPONSES TO SWEL 1 SCREENING CRITERION

The following summarizes the CNS development of the SWEL 1 screening criteria presented in EPRI Report 1025286. The SSEL was used as a base list for developing SWEL 1. The SSEL was developed utilizing the same selection criteria described in the EPRI Report 1025286 for the SWEL. Therefore, all the SSCs on the SSEL are eligible for the SWEL 1.

5.4.1. SCREEN #1 – SEISMIC CATEGORY 1

The EPRI FAQ Section 3.9 [Ref. 10.4] supplemented this screen by stating: "it is appropriate to not differentiate between SC I and non-SC I SSCs while developing SWEL 1 at your plant because, as you state, equipment selection for NTTF 2.3 is "based on the assumption that ALL critical equipment required for shutdown at a nuclear plant is SC I.""

Most SSCs selected for the SWEL 1 are Seismic Category I and were selected from the SSEL, except for the Recirc. MG Set and Control Room Air Conditioning. These components were deemed by CNS as important for safe shutdown and ensure that Class 11 and Class 13 are represented in the SWEL 1. Those SSCs that are not Seismic Category I still passed this screen due to their relevance in providing safe shutdown of the plant.

5.4.2. SCREEN #2 – EQUIPMENT OR SYSTEMS

By definition, all the SSCs on the SSEL do not regularly undergo inspections to confirm their configuration continues to be consistent with the plant licensing basis. As such, all SSEL items pass this screen.

5.4.3. SCREEN #3 – SUPPORT FOR THE 5 SAFETY FUNCTIONS

All SSCs on the SSEL have at least one of the 5 safety functions. To categorize the items, EPRI Report 1025286 (Section 3, Appendix E), CNS USI A-46 (Figures 1, 1.1, 1.2), CNS USI A-46 Seismic Evaluation Report, Screening Evaluation Worksheet (SEWS) and engineering judgment were used.

5.4.4. SCREEN #4 – SAMPLE CONSIDERATIONS

The process used to select the 101 items was iterative and continued until the targeted SSCs for each of the considerations listed below was established. During the actual walkdowns, some SSCs were substituted to reflect plant conditions (inaccessibility, protected train, etc.) and slightly (but still acceptably) skewed the selected SSCs distribution.

a. A VARIETY OF TYPES OF SYSTEMS (CNS RESPONSE)

Sample items were selected to represent a broad range of frontline and support systems included on the SSEL.

Each system on the SSEL was represented on the SWEL 1. The number of SSCs from each system reflected the ratio of the targeted SWEL 1 items to the SSEL population.

The number of selected items associated with each of the represented systems is provided in Attachment B of this report.

b. MAJOR NEW AND REPLACEMENT EQUIPMENT (CNS RESPONSE)

From Section 3.2 of Reference 10.4, this screening was supplemented when the industry stated that identifying all instances of major new and replacement equipment that may have been installed within the past 15 years would be an arduous, time consuming task.

> EPRI responded by stating: "It is not necessary to develop a comprehensive list of all the new and replacement equipment that has been installed at your plant during the past approximately 15 years (i.e., since the approximate completion of the seismic IPEEE evaluations). That is why only "major" changes need to be considered and then only those that can be readily identified. Remember, only a sample of the major new and replacement equipment needs to be included on the SWEL".
>
> Continuing: "Another approach that may be used for identifying major new and replacement equipment is to first select equipment based on the other four sample selection attributes (i.e., variety of systems, equipment types, environments, and IPEEE enhancements). Then, go through that list of equipment and identify whether any of those items had been added or replaced during the past approximately 15 years."

As recommended on page 3-7 of the EPRI guidance document, a review of the equipment on the SSEL was performed by experienced system engineers, design engineers, and plant operators to identify major new or replacement equipment installed within the last 15 years. The review was primarily based on the Design Criteria Documents (DCDs) and reviewer experience. A sample of these items is included in SWEL 1. Seven (7) of the 101 components on SWEL 1 were judged to fit the definition of major new or replacement equipment.

c. A VARIETY OF TYPES OF EQUIPMENT (CNS RESPONSE)

From Section 3.7 of Reference 10.4, this screening was supplemented as follows:

> "Question: One of the sample selection attributes described on page 3-7 of the Seismic Walkdown Guidance is to select equipment from each of the classes of equipment listed in Appendix B: Classes of Equipment. One of the equipment classes in Appendix B is Class 0, "Other." Is it necessary to include Equipment Class 0 in the sample for diversity?
>
> Response: No, it is not necessary to specifically include equipment from Equipment Class 0, "Other" when selecting a sample for the SWEL. The intent of the Guidance is to select at least one item from each of the other 21 classes of mechanical and electrical equipment listed in Appendix B [of EPRI Report 1025286]."

Therefore, at least one item from each of the classes of equipment listed in EPRI Report 1025286, Appendix B: Classes of Equipment was included in SWEL 1 to provide a sample selection of a variety of equipment types.

Each class on the SSEL was represented on the SWEL 1. The number of SSCs from each class reflected the ratio of the targeted SWEL 1 items to the SSEL population. For a description of each class and a summary of the items within each class, see page 7 of Attachment B.

d. A VARIETY OF ENVIRONMENTS (CNS RESPONSE)

Sample items were selected from different locations in the plant to include various environments (hot, cold, dry, wet, radiological) and inside and outside installations.

At CNS, only the Diesel Oil Storage Tanks and Diesel Oil Transfer Pumps are located outside. Since the Diesel Oil Storage Tanks are direct buried and therefore inaccessible, the Diesel Oil Transfer Pump A (DGDO-P-DOTA) was selected, which is located in a manhole to the Diesel Oil Storage Tank A. All other SSCs are inside.

The various environment conditions commensurate with the locations for each SSC in the SSEL. To ensure diversity in the environmental conditions, at least one item from each SSEL location (building and elevation) was included in SWEL 1 to provide a sample selection of a variety of equipment types (unless the area was restricted or protected). The number of SSCs from each location reflected the ratio of the targeted SWEL 1 items to the SSEL population.

The installed location is identified for each of the SWEL 1 items and diversity of locations is summarized in the SWEL Summary, both of which can be found in Attachment B of this report.

e. EQUIPMENT ENHANCED DUE TO VULNERABILITIES IDENTIFIED DURING THE IPEEE PROGRAM (CNS RESPONSE)

The USI A-46 and IPEEE program documentation was reviewed to determine SSCs that had been modified or otherwise enhanced to reduce IPEEE vulnerabilities. These items were listed in the SSEL and were identified for inclusion in the selection of the samples for SWEL 1.

f. RISK SIGNIFICANT ITEMS (CNS RESPONSE)

Risk significant items on the SWEL 1 were identified from a review of References 10.7 and 10.8. These references were developed utilizing PRA models Fussell-Vesely Importance and Risk Achievement Worth.

The SWEL 1 contains 53 of the 101 items that were deemed risk significant. As such, ample representation of risk sensitive SSCs were included in the SWEL 1.

5.5 CNS RESPONSES TO SWEL 2 SCREENING CRITERION

The following summarizes the CNS development of the SWEL 2 screening criteria presented in EPRI Report 1025286. SWEL 2 was developed based on a review of systems associated with the Spent Fuel Pool (SFP) that are Seismic Category I or components whose failure could result in a rapid drain-down of the water level in the SFP to less than ten feet above the fuel. No SFP SSCs were on the SSEL.

5.5.1. SCREEN #1 -- SEISMIC CATEGORY I

Only the Spent Fuel Pool concrete structure, metal liner, and spent fuel storage racks are designed as Seismic Class I. The remaining components and piping are Seismic Class IIS, therefore per EPRI Report 1025286, the CNS SFP screens out.

5.5.2. SCREEN #2 -- EQUIPMENT OR SYSTEMS

This screen is not applicable since Screen #1 determined the CNS SFP does not contain any applicable SSCs.

5.5.3. SCREEN #3 -- SAMPLE CONSIDERATIONS

This screen is not applicable since Screen #1 determined the CNS SFP does not contain any applicable SSCs.

5.5.4. SCREEN #4 -- RAPID DRAIN-DOWN

From the CNS USAR Section X-3.0, Spent Fuel Storage, the following addresses drain down of the Spent Fuel Pool:

USAR Section 3.5.1: General

> "The spent fuel pool has been designed to withstand earthquake loading as a Class I structure. It is a reinforced concrete structure, completely lined with seam welded, stainless steel plates welded to reinforcing members (channels, I beams, etc.) embedded in concrete. Interconnected drainage channels are provided behind the liner welds. These channels are designed to 1) prevent pressure buildup behind the liner plate and 2) prevent the uncontrolled loss of contaminated pool water to other relatively cleaner locations within the secondary containment. These drainage channels are formed in the concrete behind the liner and are designed to permit free gravity drainage to one of the Reactor Building floor drain sumps. The passage between the spent fuel pool and the refueling cavity above the reactor vessel is provided with two double sealed gates with a monitored drain between the gates. This arrangement permits monitoring of leaks and facilitates repair of a gate or seal, if necessary."
>
> To avoid unintentional draining of the pool, there are no penetrations that would permit the pool to be drained below a safe storage level (approximately 10 feet above the top of the fuel). Lines extending below this level are equipped with check valves and siphon breaker holes (in the event of check valve failure) to prevent siphon backflow."

USAR Section 3.6.3: Water Level

> "Fuel in the spent fuel pool is covered with sufficient water for radiation shielding. As discussed in Subsection X 3.5.2, excessive leakage or low water level alarms in the Main Control Room. An adequate fuel pool water level is maintained even in the unlikely event of a pipe break between the skimmer surge tanks and the fuel pool cooling system pumps since fuel pool discharge to the skimmer surge tanks is by overflow only. Thus, a pipe break would drain the skimmer surge tank but not reduce the fuel pool level. Check valves and siphon breaker holes prevent siphon backflow through the fuel pool cooling system discharge pipes."

The CNS SFP contains diffuser pipes that provide a distributed flow of water near the bottom of the fuel pool and reactor well (if flooded) so as to minimize the stratification of either water temperature or contamination. The diffusers are 6 ft. long pipes with three 1/2" diameter holes drilled every 2" along their length. Two

diffuser pipes are provided for the reactor well and two for the fuel storage pool. A check valve is provided at the top of each diffuser, above the pool water level, to ensure that the pool cannot be siphoned dry in the event that the supply line breaks below the water level. There are also three 7/16" diameter holes drilled into the supply line inside the pools at the 996'-10" level to stop the siphoning in the event the check valve fails [Refs. 10.9 & 10.10]. The normal SFP water level is approximately 999'-6", therefore if the diffuser pipes were severed and the associated check valves failed, the SFP water level would drop approximately 3 feet before the siphon breakers would take effect.

The industry has taken the position Spent Fuel Pool Gates are considered a part of the SFP structure and does not need to be added to SWEL 2 under Screen 4.

The refueling slot between the storage pool and the reactor well is only deep enough to permit the passage of one fuel bundle, when carried by the refueling bridge fuel grapple in the "full up" position. The fuel stored in the racks in the fuel pool sits below this slot level or elevation. This ensures that, in the unlikely event that the reactor well is drained without the gates being installed, an adequate depth of water will remain above the stored fuel.

As such, the SWEL 2 focused on components that could initiate a rapid drain down (albeit only to 996'-10"). The components selected are consistent with the industry and guidance of Screens 2 and 3. Since there are no Seismic Class I SSCs, Screen 1 was not implemented.

5.6 SWEL

The SWEL is a combination of items on SWEL 1 (page 2 of Attachment B) and SWEL 2 (page 6 of Attachment B). The summary of the SWEL is provided on page 7 of Attachment B.

The items on the SWEL were reviewed to identify those that included anchorage (i.e., items that were not line mounted equipment such as valves). 56 items were identified with anchorage. Of those, 66% (37 items) were selected for confirmation that the as-installed equipment anchorage is consistent with plant documentation of the anchorage design. This is greater than the 50% required by the EPRI Guidance document [Ref. 10.2]. The selected items were indicated on the SWEL.

This list is the input to the seismic walkdowns to be conducted in accordance with EPRI Report 1025286, Section 4 Seismic Walkdowns and Area Walk-Bys.

5.7 DEFERRED ITEMS ON SWEL

The following three items were deferred and are scheduled to be completed during the RE28 outage.

- SWEL Item #11 – EE-SWGR-480F

- SWEL Item #12 – EE-SWGR-4160G
- SWEL Item #66 – EE-PNL-CDP1B

CNS was unable to perform walkdown inspections on 4160 Switchgear G, 480 Switchgear F, and Critical Distribution Panel 1B (CDP1B) due to plant conditions requiring these components to remain energized. These components cannot be de-energized with the plant in operation, and must be done during a unit outage. CNS performs buss outages for inspections on a rotational basis, and during RE27 (the current outage) no critical busses were scheduled for removal from service for inspection. Critical Buss G is scheduled for inspection during RE28 in the fall of 2014. Due to the rotational buss outages, SWEL Item #11, EE-SWGR-480F will not be able to be inspected during the next outage as Critical Buss F will not be de-energized. Therefore, SWEL Item #11 will be changed to EE-SWGR-480G. This will allow inspection of all of the deferred items during the next refueling outage. CR 2012-9521 has been issued to track that the inspection of these three items is completed during the RE28 outage.

6.0 SEISMIC WALKDOWNS AND AREA WALK-BYS

Seismic Walkdowns were conducted by Seismic Walkdown Engineers (SWEs) and focused on the seismic adequacy of the items on the SWEL (SWEL 1 plus SWEL 2). These walkdowns also evaluated the potential for nearby SSCs to cause adverse seismic interactions with the SWEL items. A more detailed description of the Seismic Walkdown requirements can be obtained from Section 4 of the EPRI Seismic Walkdown Guidance 1025286 [Ref. 10.2]. The walkdowns focused on the following conditions:

- Adverse anchorage conditions
- Adverse seismic spatial interactions
- Other adverse seismic conditions

An adverse condition is a condition of a SSC that cannot be shown to meet its seismic licensing basis. The evaluation for adverse anchorage conditions consisted of visual inspections of the anchorage and verification of anchorage configurations. Based on the results of the visual inspections, the SWEs judged whether the anchorage was potentially degraded, non-conforming, or unanalyzed. Additionally, the configuration of the installed anchorage was verified to be consistent with existing plant documentation for at least 50% of the items on the SWEL that had anchorage. Examples of documents used for verifying that the anchorage installation configurations were consistent with the plant documentation included design drawings, seismic qualification reports and IPEEE or USI A-46 program documentation.

The evaluation for adverse seismic spatial interactions addressed the potential for physical contact between the SWEL items and other plant components or SSCs caused by relative motion between the two during an earthquake. The three types of seismic spatial interaction effects considered were proximity, failure and falling of SSCs, and flexibility of attached lines and cables.

The evaluation for other adverse seismic conditions addressed degraded conditions, and unusual mounting of heavy objects on cabinets not typically included by the Original Equipment Manufacturer (OEM). Additionally, electrical cabinets were opened and a visual inspection was performed, without breaking the plane of the cabinet, for loose or missing fasteners on component brackets, as well as electrical connections and/or relays that appeared to not be seated properly.

All results, acceptable or not acceptable, were recorded on the Seismic Walkdown Checklist (SWC) and signed and dated by both SWEs. Any non-conforming items were entered into the CNS Corrective Action Program (CAP) for further evaluation and disposition.

Area Walk-Bys were conducted by Seismic Walkdown Engineers (SWEs) to identify potentially adverse seismic conditions associated with other SSCs located in the vicinity of the SWEL items. Vicinity is defined as the room containing the SWEL item or a radius of about 35 feet from the SWEL item in a very large area. A more detailed description of the Area Walk-By requirements can be obtained from Section 4 of the EPRI Seismic Walkdown Guidance 1025286. These Area Walk-Bys focused on the following factors:

- Anchorage conditions without opening equipment
- Significantly degraded equipment in the area
- A visual inspection from the floor of cable/conduit raceways and HVAC duct
- Potentially adverse seismic interactions that could cause flooding, spray and fires in the area
- Other seismic/general housekeeping practices

The Area Walk-Bys were intended to address adverse seismic conditions that were readily identified by visual inspection, without necessarily stopping to open cabinets or taking an extended look. All results, acceptable or not acceptable, were recorded on the Area Walk-By Checklist (AWC) and signed and dated by both SWEs. Any non-conforming items were entered into the CNS Corrective Action Program (CAP) for further evaluation and disposition.

For all Seismic Walkdowns Checklists (SWCs), see Attachment C and for all Area Walk-By Checklists (AWCs), see Attachment D.

6.1 SUMMARY OF RESULTS

A total of 104 Seismic Walkdowns and 60 Area Walk-Bys were conducted resulting in 53 generated Condition Reports (CRs). Operability Determinations (OD's) were performed and action plans have been established. Table 6-1 lists the CR's generated along with the associated Seismic Walkdown Checklist (SWC) or Area Walk-By Checklist (AWC) and current status. The CR's have been categorized into the following seven codes:

1. Design Engineering Department (DED) was contacted to determine the seismic adequacy of the component.
2. Condition to be addressed via plant general housekeeping practices.

3. Condition to be addressed via plant seismic housekeeping practices.
4. Some physical change or relocation of components is required in the field to address a potentially adverse seismic condition.
5. Some minor physical change or relocation of components required in the field to address a non-seismic condition.
6. As-found condition in the field not in accordance with as-designed configuration; no field modification required since component was determined to be seismically acceptable as it was evaluated within the CR.
7. Drawing update required to properly document as-built configuration.

Table 6-2 summarizes the number of CRs in each category. The CRs can be found in Attachment E of this report.

Table 6-1: Summary of CRs Resulting from Seismic Walkdowns

CR Number/Notification Number	SWC#/AWC#	Code	Current Status
CR-CNS-2012-06126	WB-009	2 & 3	Required Action Completed, No Further Action Required
CR-CNS-2012-06128	WB-004	4	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06130	WB-030	1	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06150	WB-034	3	Required Action Completed, No Further Action Required
CR-CNS-2012-06159	WD1-071	2	Required Action Completed, No Further Action Required
CR-CNS-2012-06163	WD1-079	7	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06208	WB-002	1	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06209	WB-054	2	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06211	WB-002	2	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06232	WB-002 & WD1-005	1	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06238	WB-002	1	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06246	WB-027	5	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06253	WB-020	5	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06256	WD1-051	4	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06257	WD1-051	1	Action Plan Established, Not Implemented Yet

Table 6-1: Summary of CRs Resulting from Seismic Walkdowns			
CR Number/Notification Number	**SWC#/AWC#**	**Code**	**Current Status**
CR-CNS-2012-06260	WB-045	3	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06264	WD1-055	4	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06294	WD1-013	7	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06304	WB-018	4	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06312	WB-044	6	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06332	WB-044	6	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06467	WD1-028	6	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06491	WD1-091	5	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06497	WD1-092	4	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06498	WD1-091	1	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06500	WB-062	6	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06501	WD1-091	6	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06502	WB-062	6	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06505	WB-062	5	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06573	WB-055	4	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06579	WD1-093	7	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06582	WD1-093	1	Required Action Completed, No Further Action Required
CR-CNS-2012-06611	WB-023	2	Required Action Completed, No Further Action Required
CR-CNS-2012-06612	WB-046	2	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06613	WB-046	6	Required Action Completed, No Further Action Required
CR-CNS-2012-06615	WB-046	5	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06647	WB-041	5	Required Action Completed, No Further Action Required
CR-CNS-2012-06648	WB-041	5	Action Plan Established, Not Implemented Yet

Table 6-1: Summary of CRs Resulting from Seismic Walkdowns			
CR Number/Notification Number	**SWC#/AWC#**	**Code**	**Current Status**
CR-CNS-2012-06650	WB-041	5	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06651	WB-041	6	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06654	WB-041	1	Action Plan Established, Not Implemented Yet
CR-CNS-2012-06657	WD1-054	6	Required Action Completed, No Further Action Required
CR-CNS-2012-07392	WD1-023	4	Action Plan Established, Not Implemented Yet
CR-CNS-2012-07398	WB-059	4	Action Plan Established, Not Implemented Yet
CR-CNS-2012-07552	WD1-026	4	Action Plan Established, Not Implemented Yet
CR-CNS-2012-07558	WD1-045	1	Action Plan Established, Not Implemented Yet
CR-CNS-2012-07561	WD1-032	1	Action Plan Established, Not Implemented Yet
CR-CNS-2012-07564	WD1-050	1	Required Action Completed, No Further Action Required
CR-CNS-2012-07567	WB-015	4	Action Plan Established, Not Implemented Yet
CR-CNS-2012-07576	WD1-031	1	Action Plan Established, Not Implemented Yet
CR-CNS-2012-07578	WB-023	4	Action Plan Established, Not Implemented Yet
CR-CNS-2012-09273	WB-006	4	Action Plan Established, Not Implemented Yet
CR-CNS-2012-09274	WB-049	4	Action Plan Established, Not Implemented Yet

Table 6-2: Summary of CRs in Each Category	
CR Category	**Number of CRs**
1	12
2	6
3	3
4	13
5	8
6	9
7	3

7.0 LICENSING BASIS EVALUATIONS

Per Section 5 of the NRC endorsed Guideline 1025286 "Seismic Walkdown Guidance for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic" [Ref. 10.2]: "When a potentially adverse seismic condition is identified it will be evaluated against its seismic licensing basis. This is done by:

- Determining the Current Licensing Basis (CLB) for the plant as it relates to the seismic adequacy of the equipment,
- Identifying what seismic qualification documentation may exist for the equipment, and
- Evaluating whether the as-installed condition of the equipment is consistent with the CLB and the existing seismic documentation."

The guidance continues on to explain:

"If it cannot be easily determined that a potentially adverse seismic condition meets the plant seismic licensing basis, then that condition would be entered into the plant CAP for further review and disposition in accordance with the plant's existing processes and procedures."

CNS's interpretation of these sections is that the Licensing Basis Evaluations are intended to ensure any walkdown conditions found that are in accordance with the site's licensing basis are excluded from the site's CAP process. In lieu of the licensing basis evaluation process as explained in the Walkdown Guidance [Ref. 10.2], the Corrective Action Program (CAP) was utilized for each potential condition. This is permissible because CNS's CAP adheres to the evaluation process described in the Walkdown Guidance [Ref. 10.2]. The reasoning for utilizing CNS's CAP is that the Walkdown Guidance states "in accordance with the plant's existing processes and procedures". CNS Procedure 0.5.CR "Condition Report Initiation, Review, and Classification" [Ref. 10.16] Step 2.1 states that "if a problem is identified, then a Condition Report should be initiated no later than the end of the current shift". For adherence with the Walkdown Guidance [Ref. 10.2] and CNS's CAP processes and procedures, the conditions found during the walkdowns were immediately input into the CAP process. The CAP process was then responsible for completing the licensing basis evaluation of each condition found.

Further justification for this approach can be seen in Step 2.1.1 of CNS Procedure 0.5.CR: "CRs should be used to document actual or potential problems and not simply ask questions unless the Originator believes the resulting answer could confirm the existence of a problem. This does not mean the problem should be resolved prior to initiating a CR."

In order to adhere to CNS's CAP processes and procedures all potentially adverse seismic conditions found during the walkdowns were initially compared to easily available plant licensing design basis documents, such as IPEEE and A-46 program documentation, as well as plant-specific design basis information, like drawings or specifications. If it was determined to be an adverse seismic condition or a determination could not be easily made from the information available, the condition was input into the CAP process. The CAP process is responsible for completing a Licensing Basis Evaluation. For a copy of all initiated CRs, see Attachment E of this report.

8.0 IPEEE VULNERABILITIES RESOLUTION REPORT

Appendix H of the NRC endorsed Seismic Walkdown Guidance Document [Ref. 10.2] requires a description of the actions taken to eliminate or reduce plant-specific vulnerabilities identified by the IPEEE program [Ref. 10.11]. Based on the CNS submittal to the NRC of their IPEEE program [Ref. 10.12], the following 6 items were identified as vulnerabilities (seismically weak equipment):

- 480V Critical Switchgear 1G (EE-SWGR-4160G)
- Aux Relay Room Panels (LRP-PNL-{9-32, 33, 41, 42, 45})
- Jet Pump Instrument Rack A (LRP-PNL-{25-51})
- Solatron/Accuvolt Line Conditioners (EE-XFMR-RPSIA, B)
- Raceway Support, Reactor Building 903'
- SE and NE Quad Recirculation Fans (HV-FAN-{FC-R-1E and F})

A letter to the NRC [Ref. 10.19], in response to a Request for Additional Information (RAI) about the CNS IPEEE program [Ref. 10.18], indicates that "the first five (of the six items on the above list) are on the A-46 SSEL, and outlier resolution on these has been completed. The sixth item, which is the fan coil unit in the SE and the NE quads, is not on the A-46 SSEL. However, since plant shutdown can be accomplished with one RHR pump, these fan coil units are actually not need for safe plant shutdown. It has been determined that room cooling is not needed for running only one RHR pump." Therefore, all of the vulnerabilities (seismically weak items) identified, except one, were addressed and resolved by the USI A-46 (GL 87-02) [Ref. 10.5] program. The one remaining potential vulnerability was resolved when it was determined it could be removed from the SSEL (Safe Shutdown Equipment List) since it was not requried for safe shutdown.

This information has all been confirmed and contained in NRC Safety Evaluation (SE) dated April 27, 2001 [Ref. 10.13], Subject "Cooper Nuclear Station – Review of Individual Plant Examination of External Events (TAC No. 83611)". The NRC staff contracted with Brookhaven National Laboratory to perform a screening review of the CNS IPEEE submittal for "completeness and reasonableness". Based on the NRC SE [Ref. 10.13], they have stated that "On the basis that no vulnerabilities associated with the external events aspects of these issues were identified at the CNS, the NRC staff considers these issues resolved for the CNS."

Therefore, there are no IPEEE vulnerabilities to report at CNS.

9.0 PEER REVIEW

The approach for the peer review portion of the Near Term Task Force (NTTF) Recommendation 2.3 Seismic Walk downs was based on the guidance provided in EPRI TR 1025286 "Seismic Walk down Guidance for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic" [Ref 10.2]. The Peer Review Team was made up of 4 engineers from an independent contractor (Tetra Tech) with various backgrounds and expertise including;

seismic, licensing/regulatory, systems, and operations. The Peer Review Team leadership is made up of one overall Peer Review Lead, as well as two subject matter leads (one for equipment and one for seismic). The Peer Review Team included the following individuals (see Attachment F for resumes):

- Peer Review Lead – Greg Hostetter
  - Responsible for all peer review activities, including creation of the final peer review report.
- Equipment Lead – Norbert Wroblewski
  - Responsible for all the equipment review activities, including the review of the SWELs.
- Seismic Lead – Brian Zapata
  - Responsible for all seismic review activities of the team, including items related to the walkdowns and walk-bys.
- Seismic Engineer - Clinton Robertson
  - Participant in seismic activities and other peer review activities as needed.

The selection of Structures, Systems and Components (SSCs) was peer reviewed by engineers knowledgeable in plant design, operations, documentation, and SSCs. The Peer Review Team worked with Cooper Nuclear Station (CNS) staff to modify the initial Seismic Walkdown Equipment List (SWEL) list to ensure SWEL items selected for inspection represented a diverse sample of plant equipment required to perform the five safety functions (reactor reactivity control, reactor coolant pressure control, reactor coolant inventory control, decay heat removal, containment function).

The seismic walkdowns and area walk-bys were peer reviewed in accordance with the guidance by engineers familiar with the seismic design of equipment anchorage. The peer review included the following activities:

- The Peer Review Team conducted a short interview with each Seismic Walkdown Engineer (SWE) in order to establish their credentials.
- The Peer Review Team reviewed over 10%, as required by the EPRI guidance document [Ref. 10.2], of the walk down packages, including the Screening Evaluation Worksheets (SEWS) worksheet, plant drawings, equipment data sheets, walk down checklists, and walk-by checklists.

The approach to the licensing basis reviews included a review of the licensing basis evaluations developed, including basis for entering potentially adverse seismic conditions into the Corrective Action Program (CAP).

A review of the submittal report examined the content of the report based on the guidance. In addition to the completeness (alignment with the guidance), the accuracy with the SWELs (as reviewed) and the reviewed walkdown and area walk-by packages was also confirmed.

9.1 PEER REVIEW OF SEISMIC WALKDOWN EQUIPMENT LIST DEVELOPMENT

Based on the criteria set forth in Section 3, "Selection of SSCs", and Section 6, "Peer Review", of the guidance, the Peer Review Team concludes that the SSCs selected by CNS for walkdown satisfy the requirements of NTTF Recommendation 2.3. SWEL 1 demonstrated an adequate diversity in system types, both major new and replacement equipment, and diversity in types of equipment and environments. Risk insights were adequately considered, and components identified in the IPEEE Program were also represented. SWEL 2 adequately addressed spent fuel pool equipment per the guidance. For the Peer Review Checklist for the review of the SSC Selection, see Attachment G of this report.

9.2 PEER REVIEW OF SEISMIC WALKDOWNS AND WALK-BYS

Based on the criteria set forth in Section 2 "Personnel Qualifications", Section 4 "Seismic Walkdowns and Walk-bys", and Section 6 "Peer Review" of the guidance, the Peer Review Team concludes that the SWEs were qualified to perform the walkdowns/walk-bys and that the walkdowns/walk-bys were performed in accordance with the guidance. The packages taken into the field were developed to a significant level of detail, based on the information available, to support inspections in the field. There was sufficient detail provided to conclude that an adequate review of all available equipment appears to have been completed.

9.3 PEER REVIEW OF LICENSING BASIS EVALUATIONS

Based on the criteria set forth in Section 5, "Seismic Licensing Basis Evaluations", and Section 6, "Peer Review" of the guidance, the Peer Review Team concludes that CNS has met all requirements regarding Seismic Licensing Basis Evaluations. The Corrective Actions generated by the walkdowns and walk-bys recognize insufficient anchorages, potential damage due to proximity during seismic events, degraded conditions and general seismic housekeeping issues, and their proposed resolutions deal with each type of found condition accordingly.

9.4 PEER REVIEW OF SUBMITTAL REPORT

Based on the criteria set forth in Section 8, "Submittal Report", Appendix H, "Documentation Requirements in 50.54(f) Letter", and Section 6, "Peer Review" of the guidance, the Peer Review Team concludes that CNS has met the requirements regarding the Submittal Report. The submittal report covers in detail the seismic licensing basis, the personnel qualifications, the selection of SSCs, the seismic walkdowns and walk-bys, the licensing basis evaluations, the IPEEE Vulnerabilities Resolution Report, and this peer review.

10.0 REFERENCES

10.1 Eric J. Leeds and Michael R. Johnson letter to All Power Reactor Licensees and Holders of Construction Permits in Active or Deferred Status, "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3 and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated March 12, 2012.

10.2 EPRI Technical Report 1025286, "Seismic Walkdown Guidance for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic," dated June 2012.

10.3 Cooper Nuclear Station Updated Safety Analysis Report (USAR), Revision 25

10.4 Frequently Asked Questions on Seismic Walkdown Guidance (EPRI Report 1025286), dated August 10, 2012.

10.5 Harold R. Denton letter to All Holders of Operating Licenses not Reviewed to Current Licensing Criteria on Seismic Qualification of Equipment, "Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issue (USI) A-46 (Generic Letter 87-02)," dated February 19, 1987.

10.6 Nebraska Public Power District, Cooper Nuclear Station Safe Shutdown Equipment and Relay USI A-46 Report, dated May 7, 1996.

10.7 Cooper PRA 2012006 EPRI 1025286, Seismic Walkdown Guidance – For Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic, dated June 2012.

10.8 CNS Procedure 0-CNS-06, Revision 3: "Site Risk Significance Standards".

10.9 Lesson Title/Number: Fuel Pool Cooling/COR001 06 01, Revision 22.

10.10 P&ID 2030, "Fuel Pool Cooling Clean-Up System," Sheet 1, Revision N14 and Sheet 2, Revision N04.

10.11 James G. Partlow letter to Licensees Holding Operating Licenses and Construction Permits for Nuclear Power Reactor Facilities, "Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities – 10CFR50.54(f) (Generic Letter 88-20, Supplement 4)," dated June 28,1991.

10.12 G. R. Horn letter to U.S. Nuclear Regulatory Commission, "Individual Plant Examination for External Events (IPEEE) Report – 10CFR50.54(f) Cooper Nuclear Station, NRC Docket No. 50-298, License No. DPR-46," dated October 30, 1996.

10.13 Mohan C. Thadani letter to J. H. Swailes, "Cooper Nuclear Station – Review of Individual Plant Examination of External Events (TAC No. 83611)," dated April 27, 2001.

10.14 Seismic Qualification Utility Group (SQUG) Procedure: Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Power Plant Equipment, Revision 3A, dated December 2001.

10.15 EPRI Report NP-6041, "A Methodology for Assessment of Nuclear Power Plant Seismic Margin (Revision 1)," dated August 1991.

10.16 CNS Operation Manual Administrative Procedure 0.5.CR, Revision 19: "Condition Report Initiation, Review, and Classification".

10.17 CNS Calculation No. NEDC87-162, Revision 5C1, "CNS Frequency Versus Acceleration Response Spectra Curves."

10.18 James R. Hall letter to G. R. Horn, "Request for Additional Information Related to the Individual Plant Examination of External Events (IPEEE) for the Cooper Nuclear Station (TAC No. M83611)," dated June 3, 1998.

10.19 John H. Swailes letter to the U.S. Nuclear Regulatory Commission, "Response to Request for Additional Information – Individual Plant Examination for External Events (IPEEE)," dated January 28, 1999.

Attachment A

Personnel Qualifications

Cooper Nuclear Station

Qualification of Seismic Walkdown Project Personnel

(Page 1 of 2)

Name Patrick Yearley

Activities Performed (check all that apply):

Equipment Selection ☐ Seismic Walkdown ☒ Licensing Basis Review ☐

IPEEE Review ☐ Peer Review ☐

Subject	
EPRI Industry Training Completed	SWE ☐ SQUG ☒ N/A ☐
Summary of Nuclear and Seismic Background and Experience: (include years of nuclear seismic engineering experience). **Nuclear Seismic Experience:** Cooper Nuclear Station: Less than 1 year (November 2011 – Now). **Training:** 8/13/12 – 8/16/12 Georgia Tech Sponsored: Fundamentals of Seismic Design Training Course. 6/11/12 – 6/15/12 SQUG A-46: Walkdown Screening and Seismic Evaluation Training Course.	
Comments/Remarks:	

I certify that this summary accurately reflects my training and experience.

Patrick Yearley Date: 9/10/12

Print Name/Signature

SQUG

Certificate of Achievement

This is to Certify that

Patrick Yearley

has Completed the SQUG Walkdown Screening and Seismic Evaluation Training Course

June 11-15, 2012

Glen Allen, Virginia

Paul D. Baughman, ARES Corporation
SQUG Instructor

Divakar Bhargava, Dominion Generation
SQUG Chairman

Qualification of Seismic Walkdown Project Personnel

(Page 1 of)

Name: William Austin Price

Activities Performed (check all that apply):

Equipment Selection ☐ Seismic Walkdown ☑ Licensing Basis Review ☐

IPEEE Review ☐ Peer Review ☐

Subject	
Date BDB Required Reading Completed	
EPRI Industry Training Completed	SWE ☐ SQUG ☑ N/A ☐
Summary of Nuclear and Seismic Background and Experience: (include years of nuclear seismic engineering experience) Resume attached SQUG Certificate attached In addition, recently completed Seismic Walkdowns at Millstone Nuclear Power Station for Dominion.	
Comments/Remarks:	

I certify that this summary accurately reflects my training and experience.

William Austin Price/ Date: 9-10-12

Print Name/Signature

ZACHRY

William Price
Technician III – Civil/Structural

R E S U M E

Summary

Mr. Price has 31 years of professional experience in Civil/ Structural Engineering/Design Engineering at Millstone Nuclear Power Station. Twenty of the years were design related; all directly related to the betterment design of both PWR and BWR Nuclear Plants. Ten of these years were spent providing direct supervision to both bargaining and non-bargaining unit personnel as an Engineering Design Supervisor for Civil/Mechanical Engineering Design, technically and administratively.

Completed assignment responsibilities as Project Engineer, Engineering Design Supervisor, Discipline Engineer, Design Lead and Engineering Duty Manager as well as providing plant support for emergent issues for both Millstone Unit II and III on a day to day basis. Additionally, Mr. Price served as the key owner for post installed expansion anchors and several plant specifications relating to concrete, structural steel and welding.

In addition to 2 years of professional experience in Civil/ Structural Engineering at Zachry Nuclear Engineering, Inc.

Experience

TECHNICIAN III – CIVIL/STRUCTURAL
Zachry Nuclear Engineering, Inc.
Stonington, CT
03/10 – Present

- Certified for the SQUG Walkdown Screening and Seismic Evaluation Training Course, on June 11-15, 2012
- Performed reviews and evaluations for Surry Unit 1 & 2 in support of the relocation of Blowdown piping in the Service Water Pipe Trench.
- Provided structural calculations for Cooper Nuclear Power Station Service Water Strainer replacement project large bore pipe supports and instrument tubing supports.
- In response to INPO IER 11-1, provided engineering assessments for Millstone Unit 2 Beyond Design Basis Response Team (BDBRT). This included Emergency Operating procedure walkdowns, flood door inspections and fire protection structural assessments.
- Lead team member for Millstone Unit 2 Spent Fuel Platform Crane analysis. Coordinated interfaces between Dominion and Zachry Nuclear Engineering which included design calculations for the PAR Nuclear components fastened to the crane structure.
- Reviewed and made operability assessments for Surry Nuclear Power Station's water hammer event on the condensate system which occurred after and unplanned plant trip. Followed as a team member on the Tornado Root Cause Event Review Team.
- Designed all the new conduit supports and control panel supports for Point Beach Nuclear Power Station's Gas Turbine Controls replacement project.
- Performed reviews and evaluations for Surry Unit 1 & 2 in support of the relocation of Blowdown piping in the Service Water Pipe Trench.

ZACHRY

William Price
Technician III – Civil/Structural

R E S U M E

- Provided structural calculations for Cooper Nuclear Power Station Service Water Strainer replacement project large bore pipe supports and instrument tubing supports.
- Prepared Conduit support calculations for Turkey Point MOV 869 separation project.

Additional Experience

NUCLEAR TECHNICAL SPECIALIST III
Dominion Nuclear, Richmond, Virginia (Assigned at Millstone Station)

Projects:

- Security Modifications for Millstone Unit II and III, including drop down netting barriers, bullet proof shielding and barrier structures.
- Develop the repair plan for Millstone Unit II Service Water tunnel pipe and pipe support corrosion issues
- Prepared Technical evaluation for the use of Hilti Kwik Bolt 3 post installed concrete anchor bolts
- Scaffolding to remain inside containment during normal operations
- Feedwater Heater removal/replacement
- Control Room Halon system structural components
- Transformer Deluge system supports
- NRC Bulletin 79-02/79-14 pipe support evaluations
- Adverse Condition Report 6071, configuration controls issues, Root Cause Evaluation
- Service Water Pipe Replacement and Support rework
- Control Room Habitability equipment supports
- Rigging Safety Injection Valve 2-SI-247 out of containment
- RCP vibration monitoring
- Dry well cooler seismic supports
- NCR Bulletin 80-011 Masonry Block wall modifications
- Seismic supports for MP2 cable vault water suppression system
- Diesel Generator exterior water barriers
- Replacement of Domestic Water tank T-145
- Auxiliary Building water intrusion modifications
- Foundation Design, Millstone Radwaste Reduction Facility
- Switchgear Room Halon system supports
- Developed conduit/tubing support standards
- Walkdown of all MP2 P&ID drawings
- Structural related Safeguards projects
- Main Feed pump support Impingement

Education / Additional Training

ZACHRY

William Price
Technician III – Civil/Structural

R E S U M E

- Thames Valley Technical State College- Certificate Architectural Drafting
- Hartford State Technical College – AS Architectural Engineering
- Certified for the SQUG Walkdown Screening and Seismic Evaluation Training Course, on June 11-15, 2012

SQUG

Certificate of Achievement

This is to Certify that

Bill Price

has Completed the SQUG Walkdown Screening and Seismic Evaluation Training Course

June 11-15, 2012

Glen Allen, Virginia

Paul D. Baughman, ARES Corporation
SQUG Instructor

Divakar Bhargava, Dominion Generation
SQUG Chairman

Qualification of Seismic Walkdown Project Personnel

(Page 1 of 1)

Name: Justin Jackson

Activities Performed (check all that apply):

Equipment Selection ☐ Seismic Walkdown ☒ Licensing Basis Review ☐

IPEEE Review ☐ Peer Review ☐

Subject	
EPRI Industry Training Completed	SWE ☒ SQUG ☐ N/A ☐
Summary of Nuclear and Seismic Background and Experience: (include years of nuclear seismic engineering experience) Eachother **Nuclear Experience** Three years of nuclear experience working for Cooper Nuclear Station. **Training** Near Term Task Force Recommendation 2.3 – Plant Seismic completed on July 11, 2012.	
Comments/Remarks: None	

I certify that this summary accurately reflects my training and experience.

Justin Jackson _____ Date: 09/11/12

Print Name/Signature

EPRI | ELECTRIC POWER RESEARCH INSTITUTE

Certificate of Completion

Justin Jackson

Training on Near Term Task Force Recommendation 2.3 - Plant Seismic Walkdowns

July 11, 2012
Date

R.P. Kassawara
Robert K. Kassawara
EPRI Manager,
Structural Reliability & Integrity

Cooper Nuclear Station

Qualification of S eismic Walkdown Project Personnel

(Page 1 of 5)

Name: James M. McKinney

Activities Performed (check all that apply):

Equipment Selection ☐ Seismic Walkdown ☒ Licensing Basis Review ☐

IPEEE Review ☐ Peer Review ☐

Subject	
Date BDB Required Reading Completed	July 2012
EPRI Industry Training Completed	SWE ☒ SQUG ☐ N/A ☐

Summary of Nuclear and Seismic Background and Experience:
(include years of nuclear seismic engineering experience)

36 years of nuclear seismic experience. Prepared and implemented civil/structural plant modifications, Prepared and reviewed civil/structural calculations, prepared and reviewed pipe stress/pipe support calculations.

BS in Mechanical/Structural Engineering, Northeastern University, 1992

EPRI SWE 2-Day Training July 26 & 27, 2012 @ MPR.

Comments/Remarks:

I certify that this summary accurately reflects my training and experience.

James M. McKinney / James M. McKinney Date: 9/7/12

Print Name/Signature

ZACHRY

James M. McKinney
Engineer V – Civil/Structural

R E S U M E

Summary

Mr. McKinney has over 36 years of engineering and design experience within the power generation industry. Through his training and experience, he has gained extensive knowledge in the analysis and qualification of all classes of ASME large bore and small bore piping and pipe support qualification using AISC, as well as the seismic qualification of Class 1E components utilizing the SQUG GIP methodology, analysis methods and shake table testing. He has developed expertise regarding the rehabilitation of buried piping systems, due to external and internal corrosion, as well as the design/analysis of concrete reinforced footings, foundations and slabs-on-grade. Additionally, he has performed MOV analysis in response to NRC GL 89-10 and is familiar with the ADLPIPE, NUPIPE, ME 101, AUTOPIPE, CAESAR II, CAEPIPE, TPIPE, SUPERPIPE, PIPESTRESS, PDSTRUDL and STAAD-PRO pipe stress/ structural analysis computer software. Mr. McKinney conducted the seismic Latent Issues Review of the Service Water and Auxiliary Feedwater Systems for the Davis-Besse Restart effort. Mr. McKinney has also supported 10CFR73.55 security related upgrades at various utilities, involving civil/structural issues related to new access control buildings, bullet and blast resistant enclosures, firing positions, new fencing, microwave and camera towers.

Experience

ENGINEER V – CIVIL/STRUCTURAL
Zachry Nuclear Engineering, Inc.
Groton, CT
1995 – Present

Mr. McKinney is currently serving in the capacity of a Civil/Structural Engineer for plant modifications at various utilities. This role requires both project and technical support activities. His project support activities include company marketing for existing and future work opportunities, scheduling tasks, estimating costs, monitoring manpower, and reviewing final designs. His technical support activities include the preparation and/or review of pipe stress/ support and structural analysis calculations and disposition of various field related change documents. Mr. McKinney also performs various trips to utilities, as necessary, for client interface and walkdowns.

Mr. McKinney has supported the following projects:

- Florida Power & Light, Turkey Point Units 3 & 4
  Lead Civil/Structural engineer for Electric Power Uprate (EPU) Modifications. Piping involved included Non-SR Turbine Gland Seal and SR High Head Safety Injection systems. Responsible for reanalysis of Gland Seal piping/supports due to EPU conditions and replaced MOV's and added by-pass valves and reach-rod remote operators for High Head Safety Injection systems.

ZACHRY

James M. McKinney
Engineer V – Civil/Structural

R E S U M E

- Xcel, Monticello Nuclear Generating Plant

  Provided technical guidance/engineering services for project installing a new Compressed Air Building on site. Directly involved in vendor interface for new Metal Building, as well as design of concrete reinforced grade/cross beam foundation and support piles. Pipe stress/support computer analysis was also involved for new and affected piping/supports.

- Florida Power & Light, Turkey Point Units 3 & 4

  Lead Civil/Structural engineer for Force on Force Security Upgrade Modification. Responsible for design and analysis of several new Bullet/Blast Resistant Enclosure and Defensive Position concrete foundations, anchorages and other structural attachments.

  Performed a B31.1 Code pipe stress analysis and AISC pipe support qualification for safety-related High Head Safety Injection piping due to required plant modifications.

- Entergy, Palisades

  Qualified new extension and existing structure of PBS-2 junction box for modified deadweight/live loads. Lead structural engineer on project that replaced two 6" Safety Injection MOV's, as well as the replacement of numerous Control Room HVAC Isolation Dampers.

- Dominion, Millstone Point 2

  Evaluated Pressurizer Spray piping to ASME Class 2 requirements and pipe supports to AISC requirements for increased loading due to the installation of a new thermal insulation that also provides radiation protection.

- American Electric Power, D.C. Cook (Units 1 & 2)

  Completed DCP for modification to add missile shields to tornado missile exposed EDG components.

- Nebraska Public Power District, Cooper Nuclear Station

  On-site Civil/Structural engineer working on modifications of the PA fence line, construction of a new Access Control Building, Bullet Resistant Enclosure, and other security related structures/foundations related to the new 10CFR73.55 Security Upgrade rule change.

- Mr. McKinney is the co-author of ASME Section XI Code Case N-589, Revision 0, "Class 3 Nonmetallic Cured-In-Place Piping", sponsored by EPRI, Inc. During September of 1997, he led an on-site project team providing engineering support to Insituform East, Inc. for the industry's first buried stand-alone pressure pipe rehabilitation at Perry Nuclear Plant, utilizing Cured-In-Place piping technology. The project involved piping ranging in diameter from six inch to fifty-four inch. Mr. McKinney has been involved in various projects utilizing internal mechanical seals to address internal pipe corrosion issues.

- Mr. McKinney has also participated in two ADLPIPE pipe stress training seminars for CP&L, the first in August 1998 (Raleigh, NC) and the second in December 2001 (Crystal River Nuclear Power Station, FL) as the primary technical instructor.

ZACHRY

James M. McKinney
Engineer V – Civil/Structural

R E S U M E

Additional Experience

Altran Corporation, EAS Energy Services, Stone & Webster

- Participated in the development of program for performing analyses of valve assemblies. This program was used to perform extensive valve qualification services in support of various utilities' responses to USNRC Generic Letter (GL) 89-10, as well as seismic qualifications and operability evaluations.
- Responsible for reanalysis and qualification of Class 1N pipe stress analysis, in support of the Long Term Qualification Plan at Nebraska Public Power District.
- Completed snubber optimization using Code Case N4-11 ARS of various Class 1, 2, and 3 piping systems for Beaver Valley Station No. 2.
- Team Leader for pipe support load extraction, documentation, and calculation regeneration performing under a rigorous schedule. The successful completion of project led to the restart of Sequoyah Unit 2.
- Directed a six-person project team for Comanche Peak Units 1 and 2, optimizing ASME III piping systems and removing snubbers and unstable trapeze supports using Code Case N-411 ARS.

Education / Additional Training

- BS, Mechanical/Structural Engineering, Northeastern University, 1992
- NACE "Basic Corrosion" Course, May 1996
- SQUG "Equipment Selection and Relay Evaluation" Course, May 1997
- ASME "Waterhammer in Piping Systems" Course, May 1999
- ACI "Reinforced Concrete Design" Course, May 2001
- AISC "Design Steel Your Way with the 2005 AISC Specification Seminar, February 2007
- ASME "Use of HDPE for Power Plant Piping Systems" Course, June 2011

EPRI | ELECTRIC POWER RESEARCH INSTITUTE

Certificate of Completion

James McKinney

Training on Near Term Task Force Recommendation 2.3 - Plant Seismic Walkdowns

July 27, 2012
Date

R.P. Kassawara
Robert K. Kassawara
EPRI Manager,
Structural Reliability & Integrity

Cooper Nuclear Station

Qualification of Seismic Walkdown Project Personnel

(Page 1 of 1)

Name: Mitchell M. Marotz

Activities Performed (check all that apply):

Equipment Selection ☐ Seismic Walkdown ☒ Licensing Basis Review ☒

IPEEE Review ☐ Peer Review ☐

Subject	
EPRI Industry Training Completed	SWE ☒ SQUG ☐ N/A ☐
Summary of Nuclear and Seismic Background and Experience: (include years of nuclear seismic engineering experience) Resume attached. EPRI Training Certificate Attached.	
Comments/Remarks:	

I certify that this summary accurately reflects my training and experience.

Mitchell M. Marotz _____ Date: 09/11/12

Print Name/Signature

Mitchell M. Marotz

Cooper Nuclear Station, PO BOX 98, Brownville, NE, 68321
(402)825-5270, mmmarot@nppd.com

Professional Summary

Mitchell Marotz has been employed in the Nuclear Industry since January of 2009. His skills and specialties include, but are not limited to, the design and analysis of structural members, seismic design and analysis of structural members, overseeing projects relating to modifications and engineering studies, creating and overseeing rigging plans, and licensing basis evaluations.

Mitchell worked under three veteran Civil Engineers at Cooper Nuclear Station from May, 2009 to May, 2010. It is because of this that he holds extensive knowledge of Cooper Nuclear Station's processes and design basis.

Mitchell has recently attended (July, 2012) the NTTF Section 2.3 Seismic Training and is fully up to date with regards to the EPRI Seismic Walkdown Guidance as it relates to 10 CFR 50.54(F) Section 2.3.

Experience

May, 2012 to Present

Nebraska Public Power District - Cooper Nuclear Station

Design Engineer

- Project Management
- Seismic Design and Analysis
- In-the-field Structural Inspections

January, 2009 to May, 2012

Nebraska Public Power District - Cooper Nuclear Station

Design Engineering Intern/Coop

- Project Management
- Structural Design and Analysis
- In-the-field Structural Inspections

January, 2011 to December, 2012

Nebraska Department of Roads

Bridge Analysis and Load Rating Engineering Intern

- In-the-field Structural Inspections
- Bridge and Culvert Design and Analysis
- JavaScript Programming

Education

August, 2009 to May, 2012

University of Nebraska at Lincoln

- BS in Civil Engineering with an emphasis in Structures

EPRI | ELECTRIC POWER RESEARCH INSTITUTE

Certificate of Completion

Mitchell Marotz

Training on Near Term Task Force Recommendation 2.3 - Plant Seismic Walkdowns

July 11, 2012
Date

R.P. Kassawara
Robert K. Kassawara
EPRI Manager,
Structural Reliability & Integrity

Attachment B
Seismic Walkdown Equipment Lists and Summary

SWEL 1

#	CL	CIC	Description	Elev	Bldg	Location	Risk Sign	New or Replaced	5 Safety Functions	A-46 SSEL	Outlier	IPEEE	ABC indic.[1]	Anchor	Notes
1	0	EE-LTG-B1	EMERGENCY LIGHTING UNIT WITH SEALED LEAD-ACID CALCIUM BATTERY	932	C	S (Control Room)			1, 2, 3, 4, 5	X			N	X	3
2	0	NMT-NVA-104A	VALVE ASSEMBLY CH-A	903	R	TIP RM			5			X	E	X	2
3	0	SGT-F-CB	SGT UNIT B ACTIVATED CARBON IODINE ABSORBER	976	R	SGT RM			1, 2, 3, 4, 5			X	E	X	3
4	1	EE-MCC-DG1	MOTOR CONTROL CENTER MCC-DG1	903	DG1	---	X	X	1, 2, 3, 4, 5	X			E	X	3
5	1	EE-STRR-LZ	INTAKE STRUCTURE STARTER RACK LZ	903	IS	SWP (North Wall)			1, 2, 3, 4, 5	X			E	X	
6	1	EE-STRR-125B	125VDC STARTER RACK	859	R	SE Quad	X		1, 2, 3, 4, 5	X			E	X	3
7	1	EE-MCC-Q	MOTOR CONTROL CENTER MCC-Q	903	R	NW			3, 4	X			Q	X	
8	1	HV-STR-ECBHII	STARTER FOR ESSENTIAL CONTROL BUILDING HVAC DIVISION II	932	R	SWGR RM G			1, 2, 3, 4, 5	X			E	X	3
9	1	EE-STRR-125RX	125VDC REACTOR BLDG STARTER RACK	958	R	NW	X		1, 2, 3, 4, 5	X			E	X	3
10	2	EE-SWGR-125A	125VDC SWITCHGEAR BUS 1A	903	C	SWGR RM A	X		1, 2, 3, 4, 5	X			E	X	
11	2	EE-SWGR-480F	480V CRITICAL SWITCHGEAR 1F	932	R	SWGR RM F			1, 2, 3, 4, 5	X			E	X	
12	3	EE-SWGR-4160G	4160 VOLT SWGR G	932	R	SWGR RM G	X		1, 2, 3, 4, 5	X	X		E	X	
13	4	EE-XFMR-CDP1B	TRANSFORMER FOR CRITICAL DISTRIBUTION PANEL CDP 1B	903	C	RPS RM B			1, 2, 3, 4, 5	X			E	X	3
14	4	EE-XFMR-RPS1B	SOLATRON/ACUVOLT LINE CONDITIONER 25KVA 120VAC SINGLE PHASE	916	MPF	Above Tool Crib S. Wall			1, 2, 3, 4, 5	X	X		N	X	
15	5	SW-P-BPC	RHR SERVICE WATER BOOSTER PUMP C	882	C	N	X		4	X			E	X	3
16	5	DGDO-P-FB2	FUEL BOOSTER PUMP 2	903	DG2	---	X		1, 2, 3, 4, 5	X			E	X	3
17	6	SW-P-C	SERVICE WATER PUMP C	903	IS	SWP RM	X	X	1, 2, 3, 4, 5	X			E	X	3
18	6	CS-P-B	CORE SPRAY PUMP B TEST LINE ISOLATION	859	R	SE Quad			3			X	E	X	3
19	6	DGDO-P-DOTA	DIESEL OIL TRANSFER PUMP A	903	YD	S (DGSO Strg TK A MH)	x		1, 2, 3, 4, 5	X			E	X	
20	6	RHR-P-B	RESIDUAL HEAT REMOVAL PUMP B	859	R	SW Quad	X		3, 4	X			E	X	3
21	7	SW-AOV-2797BAV	DG2 SUPPLY	903	DG2	---	X		1, 2, 3, 4, 5	X			E		
22	7	AS-AOV-TCV1089B	AC-DG-1D SUPPLY	917	DG2	---			1, 2, 3, 4, 5	X			N		
23	7	MS-AOV-AO80B	MAIN STEAM ISOLATION VALVE B-INBOARD	901	DW	East	X		2	X			E		2
24	7	MS-RV-71FRV	SAFETY RELIEF VALVE-MAIN STEAM LINE C	921	DW	East	X		2	X			E		2
25	7	PC-AOV-243AV	SUPPRESSION CHAMBER VACUUM RELIEF	881	R	SW Torus	X		5			X	E		
26	7	RW-AOV-AO83	DRYWELL FLOOR DRAIN SUMP DISCHARGE	881	R	Above NW Torus			5			X	E		
27	7	RW-AOV-AO94	DRYWELL EQUIPMENT DRAIN SUMP DISCHARGE	881	R	Above NW Torus			5			X	E		
28	7	SW-AOV-TCV451A	REC HX A OUTLET	881	R	NE TORUS	X		4	X			E		
29	7	CRD-AOV-CV126(26-27)	SCRAM INLET	903	R	SE	X		1, 3	X			E		2

ZNI Document Type: QAPD

#	CL	CIC	Description	Elev	Bldg	Location	Risk Sign	New or Replaced	5 Safety Functions	A-46 SSEL	Outlier	IPEEE	ABC indic.[1]	Anchor	Notes
30	7	MS-AOV-AO86D	MAIN STEAM ISOLATION VAVLE D-OUTBOARD	903	R	STM Tunnel	X		2	X			E		
31	7	PC-PRV-PCV631	NITROGEN SUPPLY TO DRYWELL INSTRUMENT AIR HEADER	903	R	SE	X		5	X			E		
32	7	RMV-AOV-11AV	RM-4 CONTAINMENT ISOLATION; OUTBOARD	903	R	RX BLDG (SE)			5			X	E		
33	7	SGT-AOV-250AV	SGT UNIT B INLET	976	R	SGT RM			1, 2, 3, 4, 5			X	E		
34	7	SGT-AOV-DPCV546A	SGT UNIT A DISCHARGE DPCV	976	R	SGT RM			1, 2, 3, 4, 5			X	E		
35	8	DGDO-SOV-SSV5029	DG2 DAY TANK INLET FUEL SAFETY VALVE	903	DG2	Day Tank RM	X		1, 2, 3, 4, 5	X			E		
36	8	RR-MOV-MO53B	RR PUMP B DISCHARGE	888	DW	NE			3	X			E		2
37	8	MS-MOV-MO74	MAIN STEAM LINES UPSTREAM OF MSIV'S DRAIN INBOARD ISOLATION	901	DW	East	X	X	2	X			E		2
38	8	HPCI-MOV-MO15	STEAM SUPPLY INBOARD ISOLATION	921	DW	West-Below Grating	X	X	3	X			E		2
39	8	RCIC-MOV-MO15	RCIC STEAM INBOARD ISOLATION	921	DW	East Pen X-10	X		3	X			E		2
40	8	RWCU-MOV-MO15	SUPPLY INBOARD ISOLATION	921	DW	NW			3	X			E		2
41	8	SW-MOV-37MV	SW PUMPS CROSSTIE/NON-CRITICAL SERVICES HEADER SUPPLY	903	IS	SWP RM	X		4	X			E		
42	8	CS-MOV-MO7A	CORE SPRAY PUMP A SUCTION	859	R	NE Quad			3			X	E		
43	8	RHR-MOV-MO13D	RHR PUMP D SUCTION FROM SUPPRESSION CHAMBER	859	R	SW Quad	X		3, 4	X			E		
44	8	CS-MOV-MO26B	CORE SPRAY PUMP B TEST LINE ISOLATION	881	R	SE Quad			3			X	E		
45	8	PC-MOV-1301MV	SUPPRESSION CHAMBER DILUTION SUPPLY ISOLATION VALVE TRAIN B	881	R	SW Torus-Amid Bents 7/8	X		5			X	E		
46	8	PC-MOV-230MV	SUPPRESSION CHAMBER EXHAUST INBOARD ISOLATION	881	R	NE TORUS	X		5			X	E		
47	8	CRD-SOV-S0117{26-27}	SCRAM VALVE SOLENOID PILOT VALVE S0117	903	R	SE	X	X	1, 3	X			E		
48	8	CRD-SOV-SO140B	TRIP SYSTEM B BACKUP SCRAM VALVE S0-140B	903	R	SE (CRD Filter Area wall)			1	X			Q		
49	8	PC-MOV-1312MV	DRYWELL DILUTION SUPPLY ISOLATION VALVE-TRAIN B	903	R	SW (North of MCC Y)	X		5			X	E		
50	8	RHR-MOV-MO12B	RHR HX B OUTLET	903	R	RHR HX RM B	X		4	X			E		
51	8	RHR-MOV-MO25A	RHR LOOP A INJECTION INBOARD ISOLATION	903	R	INJ V RM	X		3, 4	X			E		
52	8	RHR-MOV-MO31B	DRYWELL SPRAY LOOP B INBOARD ISOLATION	903	R	SW (OVER DW HATCH)	X		3, 4	X			E		
53	8	SW-MOV-888MV	EMERG RETURN FROM REC NORTH CRITICAL LOOP	903	R	NE (N OF CRD ACCUM)			3, 4	X			E		
54	8	SW-MOV-MO89B	RHR HX B SW OUTLET	903	R	RHR HX RM B	X	X	4	X			E		
55	8	REC-MOV-697MV	NORTH CRITICAL LOOP RETURN	931	R	NE (above REC PP B)			3, 4	X			E		
56	8	CS-MOV-MO12A	CORE SPRAY SYSTEM A INJECTION BLOCK	931	R	NE (Platform)		X	3	X			E		
57	8	RHR-MOV-MO31A	DRYWELL SPRAY LOOP A INBOARD ISOLATION	931	R	NW (NEXT TO IR25-5)	X		3, 4	X			E		
58	8	RR-SOV-SPV741	PILOT VALVE FOR RR-741AV	931	R	SE (NEAR RACK 25-6)			5			X	Q		
59	9	SGT-FAN-{EF-R-1E}	SGT UNIT A FAN(EF-R-1E)	976	R	SGT RM			1, 2, 3, 4, 5			X	E	X	3
60	10	HV-AD-AD1407	ISOLATION DAMPER- RHR SWBP ROOM SUPPLY- DIV I	903	C	RPS RM A			4	X			E	X	

ZNI Document Type: QAPD

#	CL	CIC	Description	Elev	Bldg	Location	Risk Sign	New or Replaced	5 Safety Functions	A-46 SSEL	Outlier	IPEEE	ABC indic.[1]	Anchor	Notes
61	10	HV-MO-AD1501	BATTERY ROOM 1B HVAC SUPPLY ISOLATION DAMPER	903	C	BATT RM B	X		1, 2, 3, 4, 5	X			E	X	
62	10	HV-FAN- FC-R-1F	NE QUAD RECIRC FAN	881	R	NE QUAD			1, 2, 3, 4, 5		X	X	E	X	3
63	11	HV-AC-AC-C-1A	Computer Room Air Conditioning Unit 1A	932	C	---			1, 2, 3, 4, 5				E	X	4
64	12	DGSA-CPSR-2A	STARTING AIR COMPRESSOR 2A	903	DG2	---			1, 2, 3, 4, 5	X			N	X	3
65	13	CNS-0-RRMG-GEN-MGA	Reactor Recirc MG Set A Generator	976	R	---			1				N	X	3, 4
66	14	EE-PNL-CDP1B	CRITICAL DISTRIBUTION PANEL CDP 1B	903	C	RPS RM B			1, 2, 3, 4, 5	X			E	X	
67	14	RPS-EPA-1A4	RPS MG SET A ELECTRICAL PROTECTION ASSEMBLY	903	C	RPS RM A	X		1, 2, 3, 4, 5	X			E	X	3
68	14	EE-PNL-CPP	CRITICAL INSTRUMENT AND CONTROL POWER PANEL CPP	918	C	Cable SPRD RM			1, 2, 3, 4, 5	X			E	X	
69	14	EE-PNL-LPCEM1	LIGHTING PANEL LPCEM1	932	C	SE Corner			1, 2, 3, 4, 5	X			N	X	
70	14	EE-PNL-DG2	125VDC PANEL DG2	903	DG2	Next to East Door	X		1, 2, 3, 4, 5	X			E	X	
71	14	EE-PNL-AA3	125VDC PANEL AA3	903	R	NE (Behind MCC-K)			1, 2, 3, 4, 5	X			Q	X	
72	15	EE-BAT-125 1A	125VDC STATION SERVICE BATTERIES 1A	903	C	BATT RM A	X		1, 2, 3, 4, 5	X			E	X	3
73	16	EE-CHG-250 1A	250VDC STATION SERVICE BATTERY CHARGER 1A	903	C	SWGR RM A	X		1, 2, 3, 4, 5	X			E	X	3
74	17	DG-D-2	DIESEL GENERATOR DIESEL ENGINE NO 2	903	DG1	---	X		1, 2, 3, 4, 5	X			E	X	3
75	18	HV-TC-1090B	HV-DG-D CHILLED WATER CONTROLLER	917	DG2	On wall by unit			1, 2, 3, 4, 5	X			N	X	
76	18	LRP-RACK-{LIR-HV-DG-D}	DIESEL GEN BLDG H&V UNIT LP-1-HV-DG1D LOCAL INSTR RACK	917	DG2	North End	X		1, 2, 3, 4, 5	X			E	X	3
77	18	MS-PS-300A	MS-RV-71A DISCHARGE PRESSURE SWITCH MONITOR AND ALARM	921	DW	East	X		2				Q		2
78	18	LRP-PNL-{25-62}	RHR INSTR RAC CHB 25-62	859	R	SW Quad (Opp S. wall)	X		3, 4	X			E	X	3
79	18	LRP-PNL-{25-7}	RECIRC PIPING INSTR RACK 25-7	859	R	NW QUAD			5			X	E	X	3
80	18	CRD-ACC-128{26-27}	NITROGEN ACCUMULATOR	903	R	SE	X		1	X			E	X	3
81	18	LRP-RACK-139	CONTAINMENT PRESSURE AND LEVEL INSTRUMENT RACK	958	R	SE	X		5	X			E	X	3
82	19	HV-TE-1089B	HV-DG-D DISCHARGE AIR TEMP	917	DG2	---			1, 2, 3, 4, 5	X			N		
83	19	PC-TE-505C	ZONE 2B AREA TEMP(DRYWELL)	921	DW	---			5	X			Q		2
84	19	PC-TE-1H	TORUS WATER TEMPERATURE ELEMENT	859	R	Torus Area			5	X			Q		
85	19	PC-TE-2G	TORUS WATER TEMPERATURE ELEMENT	859	R	Torus Area			5	X			Q		
86	19	RHR-TE-94C	RHR HX A OUTLET TEMP	903	R	RHR HX RM A			4	X			Q		
87	19	SW-TE-94B	SERVICE WATER OUTLET FROM RHR HX B	903	R	RHR HX RM B			4	X			N		
88	19	RHR-TE-93A	RHR HX A INLET TEMP	931	R	RHR HX RM A			4	X			N		
89	20	LRP-PNL-{9-33}	ENGINEERED SAFEGUARD SUBSYSTEM I RELAY CABINET 9-33	903	C	Aux Relay RM	X		1, 2, 3, 4, 5	X	X		E	X	3
90	20	LPR-PNL-ISO-A	ISOLATION RELAY CABINET A	918	C	Cable SPRD RM			5	X			E	X	3, 5
91	20	LRP-PNL-{9-4}	REACTOR WATER CLEANUP RECIRC BENCH BD 9-4	932	C	Control RM			2,5	X			E	X	

ZNI Document Type: QAPD

#	CL	CIC	Description	Elev	Bldg	Location	Risk Sign	New or Replaced	5 Safety Functions	A-46 SSEL	Outlier	IPEEE	ABC indic.[1]	Anchor	Notes
92	20	LRP-PNL-H	PRIM CONTAINMENT VENT & NITROGEN INERT VERT BD-H	932	C	---	X		5	X	X		E	X	
93	20	DG1 EXCIT REG PNL	DG1 EXCITER REGULATOR PNL	903	DG1	---	X		1, 2, 3, 4, 5	X			E	X	3
94	20	DG-PNL-DG2{ECP}	DG2 GENERATOR CONTROL PNL	903	DG2	---	X		1, 2, 3, 4, 5				E	X	3
95	20	LRP-PNL-S191	SW PUMPS A&C STRAINER S191 CONTROL PANEL	903	IS	SWP RM (North Wall)			1, 2, 3, 4, 5	X			E	X	3
96	21	CM-TK-ECSA	EMERGENCY CONDENSATE STORAGE TANK A	877	C	ECST RM			1, 3		X	X	E	X	3
97	21	DGSA-RCVR-2A	AIR RECEIVER 2A	903	DG1	---	X		1, 2, 3, 4, 5	X			E	X	3
98	21	DGJW-CT-DG2	DG2 JACKET WATER STANDPIPE	903	DG2	---	X		1, 2, 3, 4, 5	X			E	X	3
99	21	IA-ACC-256G	MS-RV-71G ACCUMULATOR	921	DW	---	X		2	X			E		2
100	21	RHR-HX-A	RESIDUAL HEAT REMOVAL HEAT EXCHANGER A	931	R	---	X		4	X			E	X	3
101	0	SW-STNR-A	Service Water Strainer A	903	IS	SWP Rm	X		1, 2, 3, 4, 5	X			E	X	3, 6
						Totals	53	7	101	78	6	19	101	54	

Notes:

1. E = Essential, N = Nonessential, Q = Environmental Quality (Essential)
2. Inaccessible or difficult to access during normal operations. To be inspected when accessible.
3. Detailed anchorage inspection to be performed
4. Added per CNS request to ensure this Class is represented
5. LPR-PNL-ISO-A is not a recognized CIC number at CNS. This cabinet contains the relay PC-REL-ISO1AX.
6. This item was not originally included in SSEL.

54 Items on SWEL 1 have anchorage

35 Detailed anchorage inspections to be performed

5 Safety Functions

1. Reactor Reactivity Control
2. Reactor Coolant Pressure Control
3. Reactor Coolant Inventory Control
4. Decay Heat Control
5. Containment Function

SWEL 2

#	CL	CIC	Description	Elev	Bldg	Location	Anchor	Notes
1	5	FPC-P-1A	Fuel Pool Circulating Pump 1A	958	R	NW	x	1
2	7	FPC-V-32	Diffuser Control Valve	1001	R	---		
3	14	FPC-LSL-66	SFP Level Switch Alarm Switches	976	R	---		
4	19	FPC-TE-71	SFP Hx Inlet Temperature	958	R	NW		
5	21	FPC-HX-B	SFP Hx 1B	958	R	FPC Hx Rm	x	1
6	0	FPC-CV-18	Diffuser Check Valve	1001	R	---		

Notes

1 Detail Anchorage to be performed

SWEL Summary

Class	Description	Count	Target	Selected
0	Miscellaneous	19	5	4
1	MCCs	24	6	6
2	Low Voltage SWGR	6	2	2
3	Medium Voltage SWGR	4	1	1
4	Transformers	8	2	2
5	Horizontal Pumps	6	2	2
6	Vertical Pumps	12	3	4
7	Fluid Operated Valves	55	14	14
8	MOVs, SOVs	94	24	24
9	Fans	8	2	1
10	Air Handlers	12	3	3
11	Chillers	1	0	1
12	Air Compressors	4	1	1
13	Motor Generators	1	0	1
14	Distribution Panels	25	6	6
15	Batteries on Racks	4	1	1
16	Bat Chargers/Inverters	4	1	1
17	Engine Generators	2	1	1
18	Instr on Racks	33	8	7
19	Temp Sensors	29	7	7
20	Instr/Cntrl Pnls/Racks	29	7	7
21	Tanks & HXs	22	6	5
	Totals	402	102	101

System ID	Count	Target	Selected
AS	2	1	1
CM	2	1	1
CRD	14	4	4
CS	10	3	4
DG	14	4	3
DGDO	12	3	3
DGJW	2	1	1
DGSA	8	2	2
EE	80	20	18
HPCI	2	1	1
HV	29	7	7
IA	8	2	1
LRP	38	10	9
MS	26	7	5
NMT	4	1	1
PC	30	8	8
RCIC	2	1	1
REC	10	3	1
RHR	41	10	9
RMV	4	1	1
RPS	4	1	1
RR	6	2	2
RRMG	1	0	1
RW	4	1	2
RWCU	3	1	1
SGT	16	4	4
SW	30	8	9
Totals	402	107	101

Building	Elevation	Count	Target # WD	Selected WD	Count Total	Target # WD Total	Selected WD Total
C	877	3	1	1			
C	882	5	1	1			
C	903	41	10	9	83	20	18
C	918	9	2	2			
C	932	25	6	5			
DG1	903	21	5	3	30	7	3
DG1	917	9	2	0			
DG2	903	22	6	8	31	8	12
DG2	917	9	2	4			
DW	888	2	1	1			
DW	901	6	2	2	41	11	10
DW	921	32	8	7			
DW	972	1	0	0			
IS	903	16	4	5	16	4	5
MPF	916	2	1	1	2	1	1
R	859	36	9	9			
R	881	27	7	8			
R	903	69	17	18			
R	931	25	6	6	195	49	51
R	932	15	4	3			
R	958	6	2	2			
R	976	17	4	5			
YD	903	4	1	1	4	1	1
	Totals	402	101	101	402	101	101

Target Population	101

NOTE: The "Count" is the number of items from the SSEL

NOTE: The differences for the "Target" totals are due to rounding.

Attachment C

Seismic Walkdown Checklists (SWCs)

Notes:

1. SWEL Items 1-11, 1-12 and 1-66 were deferred. Therefore there are no SWCs for these items.
2. The following pages were intentionally left blank: 20, 85, 101, 180, and 184.
3. On the following pages, no pictures were provided and the picture blocks were intentionally left blank: 7, 10, 16, 19, 23, 29, 32, 36, 39, 45, 48, 51, 57, 60, 63, 69, 88, 97, 100, 104, 107, 110, 113, 116, 119, 122, 125, 131, 140, 143, 167, 176, 179, 183, 187, 190, 193, 196, 199, 202, 205, 208, 211, 214, 217, 220, 223, 226, 227, 230, 233, 237, 243, 246, 258, 261, 264, 267, 270, 273, 280, 286, 289, 292, 295, 298, 301, 304, 307, 310, 313, 316, and 322.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-LTG-B1* Equip. Class[1] *0*

Equipment Description *Emergency Lighting w/ Sealed Lead-Acid Battery (SWC# WD-001 & AWC# WB-042)*

Location: Bldg. *C* Floor El. *932* Room, Area *C-932-5*

Manufacturer, Model, Etc. (optional but recommended) _____

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☒ N☐

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☒ N☐ U☐ N/A☐

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☒ N☐ U☐ N/A☐

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☐ N☐ U☐ N/A☒
   Carpeted

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☒ N☐ U☐ N/A☐
   EE-CBH-3125, Rev.0

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-LTG-B1* Equip. Class[1] *0*

Equipment Description *Emergency Lighting w/ Sealed Lead-Acid Battery (SWC# WD-001 & AWC# WB-042)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

Evaluated by: *James McKinney* James McKinney Date: 11/5/12

Justin Jackson Justin Jackson 11/01/12

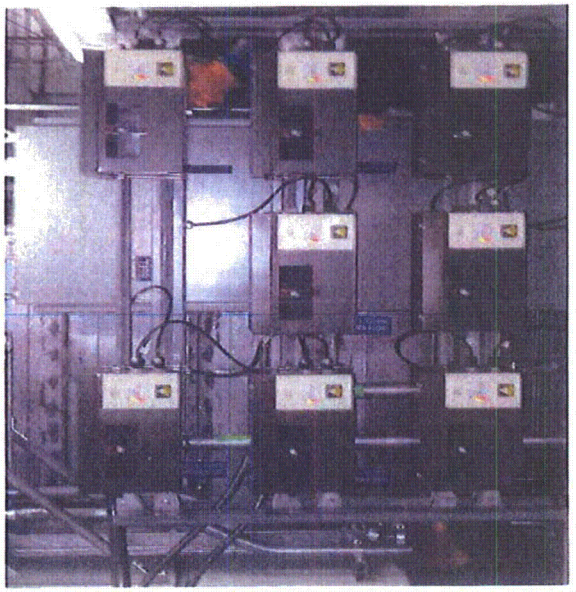
Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-LTG-B1* Equip. Class[1] *0*

Equipment Description *Emergency Lighting w/ Sealed Lead-Acid Battery (SWC# WD-001 & AWC# WB-042)*

Photographs



Note:

Note:

Note:

Note:

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *NMT-NVA-104A* Equip. Class[1] *0*

Equipment Description *Valve Assembly CH-A (SWC# WD-SWEL-002 & AWC# WB-013)*

Location: Bldg. *Rx* Floor El. *903* Room, Area *TIP Room*

Manufacturer, Model, Etc. (optional but recommended) *GE*

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☐ N☒

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☐ N☐ U☐ N/A☒

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☐ N☐ U☐ N/A☒

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☐ N☐ U☐ N/A☒

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☐ N☐ U☐ N/A☒

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *NMT-NVA-104A* Equip. Class[1] *0*

Equipment Description *Valve Assembly CH-A (SWC# WD-SWEL-002 & AWC# WB-013)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

Evaluated by: *Justin Jackson* Justin Jackson Date: 10/26/12

James McKinney James McKinney 10/19/12

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *NMT-NVA-104A* Equip. Class[1] *0*

Equipment Description *Valve Assembly CH-A (SWC# WD-SWEL-002 & AWC# WB-013)*

Photographs

Note:	**Note:**
Note:	**Note:**

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *SGT-F-CB* Equip. Class[1] *0*

Equipment Description *SGT Unit B Activated Carbon Iodine Abs. (SWC# WD-SWEL-003 & AWC# WB-030)*

Location: Bldg. *Rx* Floor El. *976* Room, Area *R-976-SGT Room*

Manufacturer, Model, Etc. (optional but recommended) _____

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☒ N☐

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☒ N☐ U☐ N/A☐

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☒ N☐ U☐ N/A☐

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☒ N☐ U☐ N/A☐

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☒ N☐ U☐ N/A☐
   In accordance with drawing #4245, Revision 9

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *SGT-F-CB* Equip. Class[1] *0*

Equipment Description *SGT Unit B Activated Carbon Iodine Abs. (SWC# WD-SWEL-003 & AWC# WB-030)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

Evaluated by: *William Price* Date: 10/16/12

Patrick Yearley 10/16/12

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *SGT-F-CB* Equip. Class[1] *0*

Equipment Description *SGT Unit B Activated Carbon Iodine Abs. (SWC# WD-SWEL-003 & AWC# WB-030)*

Photographs

Note:	**Note:**
Note:	**Note:**

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-MCC-DG1* Equip. Class[1] *1*

Equipment Description *Motor Control Center MCC-DG1 (SWC# WD-SWEL-004 & AWC# WB-001)*

Location: Bldg. *DG1* Floor El. *903-6* Room, Area *DG1*

Manufacturer, Model, Etc. (optional but recommended) *I.T.E.*

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☒ N☐

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☒ N☐ U☐ N/A☐

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☒ N☐ U☐ N/A☐

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☒ N☐ U☐ N/A☐

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) *Reference Drawing CNS-EE-102 & 104* Y☒ N☐ U☐ N/A☐

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-MCC-DG1* Equip. Class[1] *1*

Equipment Description *Motor Control Center MCC-DG1 (SWC# WD-SWEL-004 & AWC# WB-001)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

Cabinet also bolted on outside top right side to adjacent cabinet.

Evaluated by: *Justin Jackson* Justin Jackson Date: 10/26/12

James McKinney James McKinney 10/19/12

Status: Y☒ N☐ U☐

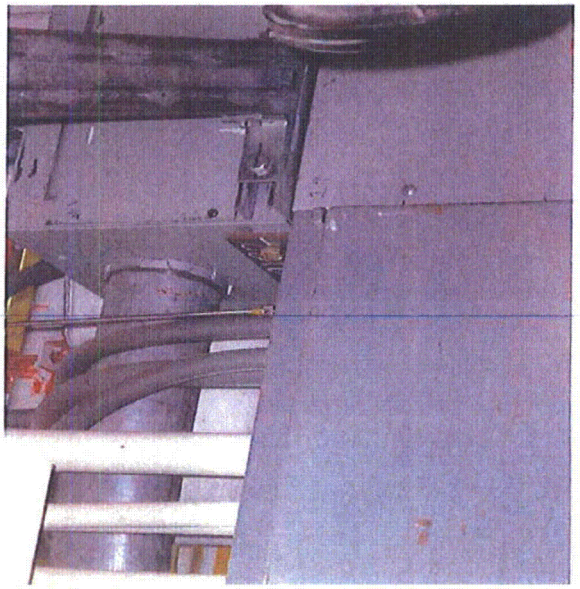
Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-MCC-DG1* Equip. Class[1] *1*

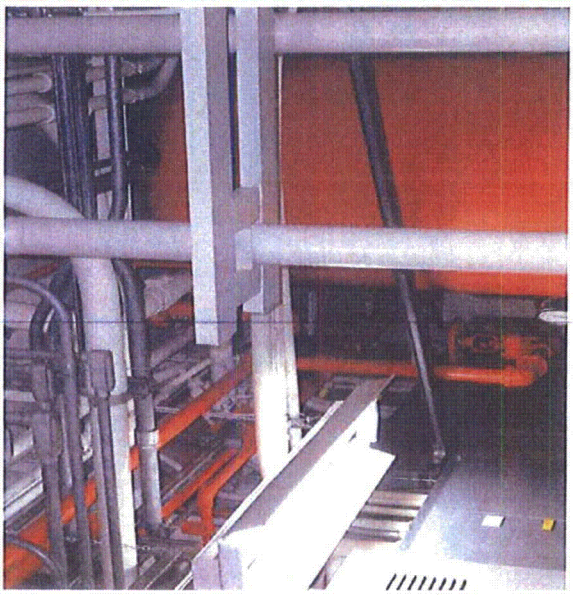
Equipment Description *Motor Control Center MCC-DG1 (SWC# WD-SWEL-004 & AWC# WB-001)*

Photographs

Note:



Note:



Note:

Note:

Status: Y☐ N☒ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-STRR-LZ* Equip. Class[1] *1*

Equipment Description *Intake Structure Starter Rack LZ (SWC# WD-SWEL-005 & AWC# WB-002)*

Location: Bldg. *IS* Floor El. *903* Room, Area *SWP (North Wall)*

Manufacturer, Model, Etc. (optional but recommended) *Allen Bradley*

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☐ N☒

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☐ N☐ U☐ N/A☒

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☐ N☐ U☐ N/A☒

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☐ N☐ U☐ N/A☒

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☐ N☐ U☐ N/A☒

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☐ N☒ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-STRR-LZ* Equip. Class[1] *1*

Equipment Description *Intake Structure Starter Rack LZ (SWC# WD-SWEL-005 & AWC# WB-002)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☐ N☒ U☐ N/A☐
   Conduit in overhead may not be supported adequately.
   CR-CNS-2012-06232
   Refer to AWC# WB-002.

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

CR-CNS-2012-06232

Evaluated by: *William Price* Date: 10/16/12

Patrick Yearley 10/16/12

Status: Y☐ N☒ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-STRR-LZ* Equip. Class[1] *1*

Equipment Description *Intake Structure Starter Rack LZ (SWC# WD-SWEL-005 & AWC# WB-002)*

Photographs

Note:	**Note:**
Note:	**Note:**

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-STRR-125B* Equip. Class[1] *1 MCC*

Equipment Description *125VDC Starter Rack HPCI-MO-16/HPCI-12SVDC Disconnect (SWC# WD-SWEL-006 & AWC# WB-009)*

Location: Bldg. *Rx* Floor El. *859* Room, Area *SE-QUAD*

Manufacturer, Model, Etc. (optional but recommended) *Nutherm International Starter Panel*

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☒ N☐

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☒ N☐ U☐ N/A☐

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☒ N☐ U☐ N/A☐

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☒ N☐ U☐ N/A☐

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☒ N☐ U☐ N/A☐

   In accordance with drawing #1309540-EE-980B1

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-STRR-125B* Equip. Class[1] *1 MCC*

Equipment Description *125VDC Starter Rack HPCI-MO-16/HPCI-12SVDC Disconnect (SWC# WD-SWEL-006 & AWC# WB-009)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐
   Overhead light, chain hung, anchorage to ceiling appears to be inserts. The light is free to sway, only the bulbs may fall. Seismic Walkdown Engineers (SWEs) judgement is these issues will not cause damage to the starter.

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐
    Overhead light above IR-25-60 (Same configuration as Question #8)

Comments (Additional pages may be added as necessary)

Evaluated by: *William Price* Date: 10/16/12

Patrick Yearley 10/16/12

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-STRR-125B* Equip. Class[1] *1 MCC*

Equipment Description *125VDC Starter Rack HPCI-MO-16/HPCI-12SVDC Disconnect (SWC# WD-SWEL-006 & AWC# WB-009)*

Photographs

Note: N/A	**Note: N/A**
Note:	**Note:**

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-MCC-Q* Equip. Class[1] *Class 1 Motor Control Centers*

Equipment Description *Motor Control Center MCC-Q (SWC# WD-SWEL-007 & AWC# WB-064)*

Location: Bldg. *Rx* Floor El. *903* Room, Area *R-903-NW*

Manufacturer, Model, Etc. (optional but recommended) _____

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☐ N☒

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☐ N☐ U☐ N/A☒

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☐ N☐ U☐ N/A☒

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☐ N☐ U☐ N/A☒

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☐ N☐ U☐ N/A☒

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-MCC-Q* Equip. Class[1] *Class 1 Motor Control Centers*

Equipment Description *Motor Control Center MCC-Q (SWC# WD-SWEL-007 & AWC# WB-064)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

Evaluated by: *William Price* Date: 11-16-12

James McKinney 11/16/12

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-MCC-Q* Equip. Class[1] *Class 1 Motor Control Centers*

Equipment Description *Motor Control Center MCC-Q (SWC# WD-SWEL-007 & AWC# WB-064)*

Photographs

Note:	**Note:**
Note:	**Note:**

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *HV-STR-ECBHII* Equip. Class[1] *1*

Equipment Description *Starter for Essential C Bldg HVAC Div II (SWC# WD-SWEL-008 & AWC# WB-020)*

Location: Bldg. *Rx* Floor El. *932* Room, Area *Switchgear Room G*

Manufacturer, Model, Etc. (optional but recommended) _____

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☒ N☐

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☒ N☐ U☐ N/A☐

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☒ N☐ U☐ N/A☐

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☒ N☐ U☐ N/A☐

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) *Drawing EE-RBSWG-2181* Y☒ N☐ U☐ N/A☐

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *HV-STR-ECBHII* Equip. Class[1] *1*

Equipment Description *Starter for Essential C Bldg HVAC Div II (SWC# WD-SWEL-008 & AWC# WB-020)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐
   Overhead conduit well supported, no issue

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐
   Above light on unistrut, bulbs are removed, no issue

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐
   Attached to same rigid reinforced concrete wal, no issue

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

Evaluated by: *Justin Jackson* Justin Jackson Date: 10/26/12

James McKinney James McKinney 10/19/12

Status: Y☒ N☐ U☐

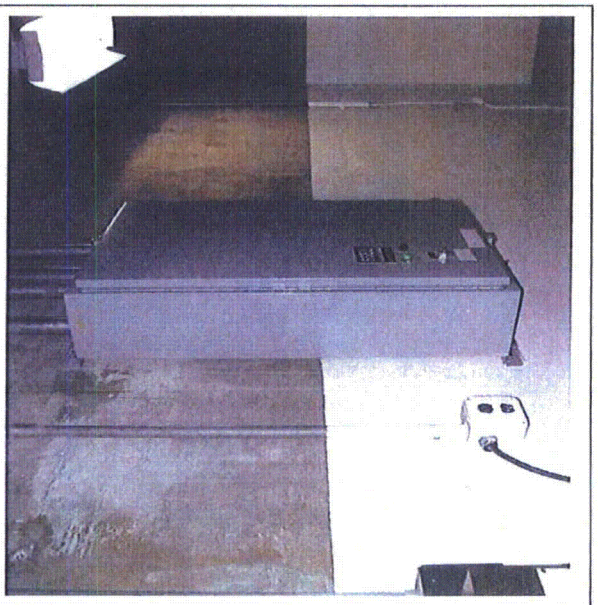
Seismic Walkdown Checklist (SWC)

Equipment ID No. *HV-STR-ECBHII* Equip. Class[1] *1*

Equipment Description *Starter for Essential C Bldg HVAC Div II (SWC# WD-SWEL-008 & AWC# WB-020)*

Photographs

Note:



Note:

Note:

Note:

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-STRR-125Rx* Equip. Class[1] *1*

Equipment Description *125VDC Reactor Bldg. Starter Rack (SWC# WD-SWEL-009 & AWC# WB-021)*

Location: Bldg. *Rx* Floor El. *958* Room, Area *NW*

Manufacturer, Model, Etc. (optional but recommended) _____

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☒ N☐

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☒ N☐ U☐ N/A☐

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☒ N☐ U☐ N/A☐

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☒ N☐ U☐ N/A☐

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☒ N☐ U☐ N/A☐
   In accordance with details provided in SEWS EE-STRR-125Rx, Revision 0

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-STRR-125Rx* Equip. Class[1] *1*

Equipment Description *125VDC Reactor Bldg. Starter Rack (SWC# WD-SWEL-009 & AWC# WB-021)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

Evaluated by: *William Price* Date: 10/16/12

Patrick Yearley 10/16/12

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-STRR-125Rx* Equip. Class[1] *1*

Equipment Description *125VDC Reactor Bldg. Starter Rack (SWC# WD-SWEL-009 & AWC# WB-021)*

Photographs

Note: N/A	**Note: N/A**
Note:	**Note:**

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-SWGR-125A* Equip. Class[1] *2*

Equipment Description *125VDC Switchgear Bus 1A (SWC# WD-SWEL-010 & AWC# WB-053)*

Location: Bldg. *C* Floor El. *903* Room, Area *SWGR Room A*

Manufacturer, Model, Etc. (optional but recommended) _____

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☐ N☒

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☐ N☐ U☐ N/A☒

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☐ N☐ U☐ N/A☒

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☐ N☐ U☐ N/A☒

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☐ N☐ U☐ N/A☒

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-SWGR-125A* Equip. Class[1] *2*

Equipment Description *125VDC Switchgear Bus 1A (SWC# WD-SWEL-010 & AWC# WB-053)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

Evaluated by: *William Price* Date: 11-15-12

James McKinney 11/15/12

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-SWGR-125A* Equip. Class[1] *2*

Equipment Description *125VDC Switchgear Bus 1A (SWC# WD-SWEL-010 & AWC# WB-053)*

Photographs

Note:	**Note:**
Note:	**Note:**

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-XFMR-CDP1B* Equip. Class[1] *4 Transformers*

Equipment Description *XFMR for Control Dist. Pnl. CDP1B (SWC# WD-SWEL-013 & AWC# WB-039)*

Location: Bldg. *C* Floor El. *903* Room, Area *C-903-RPS Room 3*

Manufacturer, Model, Etc. (optional but recommended) *Matra Electric, Model #9075525K*

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☒ N☐

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☒ N☐ U☐ N/A☐

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☒ N☐ U☐ N/A☐

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☒ N☐ U☐ N/A☐

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☒ N☐ U☐ N/A☐

   Drawing 127857 Rev. B sheet 1,shows anchor bolts in 6 places for EE-XFMR-CDP1A & CDP1B and states "as built". The units have 4-5/8" shell anchors in the field.Plant configuration should be revised to show 4 anchors. CR-CNS-2012-06294. SWEs find the anchorage to be acceptable. This is a drawing update only.

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-XFMR-CDP1B* Equip. Class[1] *4 Transformers*

Equipment Description *XFMR for Control Dist. Pnl. CDP1B (SWC# WD-SWEL-013 & AWC# WB-039)*

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions?	Y☒ N☐ U☐

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures?	Y☒ N☐ U☐ N/A☐
8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment?	Y☒ N☐ U☐ N/A☐
9. Do attached lines have adequate flexibility to avoid damage?	Y☒ N☐ U☐ N/A☐
10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects?	Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment?	Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

CR-CNS-2012-06294

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-XFMR-CDP1B* Equip. Class[1] *4 Transformers*

Equipment Description *XFMR for Control Dist. Pnl. CDP1B (SWC# WD-SWEL-013 & AWC# WB-039)*

Evaluated by: *William Price* Date: 10-21-12

Patrick Yearley 10-21-12

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-XFMR-CDP1B* Equip. Class[1] *4 Transformers*

Equipment Description *XFMR for Control Dist. Pnl. CDP1B (SWC# WD-SWEL-013 & AWC# WB-039)*

Photographs

Note: N/A	**Note: N/A**
Note:	**Note:**

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-XFMR-RPS1B* Equip. Class[1] *4 Transformers*

Equipment Description *Solatron/AcuVt Line Cond. 25KVA 120VAC (SWC# WD-SWEL-014 & AWC# WB-045)*

Location: Bldg. *MPF* Floor El. *903* Room, Area *Above Tool Crib South Wall*

Manufacturer, Model, Etc. (optional but recommended) *Sola Electric Company, S2450 Model A4525*

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☐ N☒

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☒ N☐ U☐ N/A☐
   Internal anchorage of XFMR to baseplate is not visible.

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☒ N☐ U☐ N/A☐
   Internal anchorage of XFMR to baseplate is not visible.

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☒ N☐ U☐ N/A☐
   Internal anchorage of XFMR to baseplate is not visible.

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☒ N☐ U☐ N/A☐
   SEWs ID: EE-XFMR-RPSIA (Rev.0) Has three (3) 1/2" thick base plates, {two (2) vertical strips, and one (1) large plate across both vertical strips.}

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-XFMR-RPS1B* Equip. Class[1] *4 Transformers*

Equipment Description *Solatron/AcuVt Line Cond. 25KVA 120VAC (SWC# WD-SWEL-014 & AWC# WB-045)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐
Moves with concrete wall.

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐
~12" from SSEL EE-XFMR-RPS1A

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

Evaluated by: *Justin Jackson* Justin Jackson Date: 10/26/12

Jim McKinney James McKinney 10/16/12

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *EE-XFMR-RPS1B* Equip. Class[1] *4 Transformers*

Equipment Description *Solatron/AcuVt Line Cond. 25KVA 120VAC (SWC# WD-SWEL-014 & AWC# WB-045)*

Photographs

Note:	**Note:**
Note:	**Note:**

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *SW-P-BPC* Equip. Class[1] *5 Horizontal Pumps*

Equipment Description *RHR Service Water Booster Pump C (SWC# WD-SWEL-015 & AWC# WB-041)*

Location: Bldg. *C* Floor El. *882* Room, Area *C-882-N*

Manufacturer, Model, Etc. (optional but recommended) *Byron Jackson Model 8x10x16 DVS Pump*

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☒ N☐

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☒ N☐ U☐ N/A☐

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☒ N☐ U☐ N/A☐

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☒ N☐ U☐ N/A☐

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) *Reference Drawings 4092,4082, and 2E2040* Y☒ N☐ U☐ N/A☐

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *SW-P-BPC* Equip. Class[1] *5 Horizontal Pumps*

Equipment Description *RHR Service Water Booster Pump C (SWC# WD-SWEL-015 & AWC# WB-041)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

Evaluated by: *Mitchell Marotz* Date: 10-24-12

Patrick Yearley 10-24-12

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *SW-P-BPC* Equip. Class[1] *5 Horizontal Pumps*

Equipment Description *RHR Service Water Booster Pump C (SWC# WD-SWEL-015 & AWC# WB-041)*

Photographs

Note:

Note:

Note:

Note:

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *DGDO-P-FB2* Equip. Class[1] *5 Horizontal Pumps*

Equipment Description *Fuel Booster Pump 2 (SWC# WD-SWEL-016 & AWC# WB-044)*

Location: Bldg. *DG2* Floor El. *903* Room, Area *DG2*

Manufacturer, Model, Etc. (optional but recommended) *Model 3K10 Rotary Room*

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☒ N☐

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☒ N☐ U☐ N/A☐

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☒ N☐ U☐ N/A☐

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☒ N☐ U☐ N/A☐

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☒ N☐ U☐ N/A☐
   In accordance with SEWS # DGDO-P-FB1, Revision 0 and drawing #4081, Revision no.2

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *DGDO-P-FB2* Equip. Class[1] *5 Horizontal Pumps*

Equipment Description *Fuel Booster Pump 2 (SWC# WD-SWEL-016 & AWC# WB-044)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

Evaluated by: *William Price* Date: 10/16/12

Patrick Yearley 10/16/12

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *DGDO-P-FB2* Equip. Class[1] *5 Horizontal Pumps*

Equipment Description *Fuel Booster Pump 2 (SWC# WD-SWEL-016 & AWC# WB-044)*

Photographs

Note:	**Note:**
Note:	**Note:**

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *SW-P-C* Equip. Class[1] *6*

Equipment Description *Service Water Pump C (SWC# WD-SWEL-017 & AWC# WB-002)*

Location: Bldg. *IS* Floor El. *903* Room, Area *SW Pump Room*

Manufacturer, Model, Etc. (optional but recommended) *Byron Jackson Model 28 KXL-ISTG*

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☒ N☐

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☒ N☐ U☐ N/A☐

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☒ N☐ U☐ N/A☐

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☒ N☐ U☐ N/A☐

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) *Reference Drawing 2C-4747 and Drawing Retrieval #450200581* Y☒ N☐ U☐ N/A☐

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *SW-P-C* Equip. Class[1] *6*

Equipment Description *Service Water Pump C (SWC# WD-SWEL-017 & AWC# WB-002)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

Evaluated by: *James McKinney* James McKinney Date: 11/9/12

Patrick Yearley Patrick Yearley Date: 11/8/12

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *SW-P-C* Equip. Class[1] *6*

Equipment Description *Service Water Pump C (SWC# WD-SWEL-017 & AWC# WB-002)*

Photographs

Note:	**Note:**
Note:	**Note:**

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *CS-P-B* Equip. Class[1] *6*

Equipment Description *Core Spray Pump B (SWC# WD-SWEL-018 & AWC# WB-009)*

Location: Bldg. *Rx* Floor El. *859* Room, Area *SE-QUAD*

Manufacturer, Model, Etc. (optional but recommended) _____

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☒ N☐

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☒ N☐ U☐ N/A☐

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☒ N☐ U☐ N/A☐

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☒ N☐ U☐ N/A☐

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☒ N☐ U☐ N/A☐

   In accordance with drawing #4243

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *CS-P-B* Equip. Class[1] *6*

Equipment Description *Core Spray Pump B (SWC# WD-SWEL-018 & AWC# WB-009)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

Evaluated by: *William Price* Date: 10/16/12

Patrick Yearley 10/16/12

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *CS-P-B* Equip. Class[1] *6*

Equipment Description *Core Spray Pump B (SWC# WD-SWEL-018 & AWC# WB-009)*

Photographs

Note:	**Note:**
Note:	**Note:**

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *DGDO-P-DOTA* Equip. Class[1] *6*

Equipment Description *Diesel oil Transfer Pump A (SWC# WD-SWEL-019 & AWC# WB-046)*

Location: Bldg. *YD* Floor El. _____ Room, Area *DGDO Storage Tank A Manhole*

Manufacturer, Model, Etc. (optional but recommended) _____

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☐ N☒

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☐ N☐ U☐ N/A☒

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☐ N☐ U☐ N/A☒

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☐ N☐ U☐ N/A☒

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☐ N☐ U☐ N/A☒

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *DGDO-P-DOTA* Equip. Class[1] *6*

Equipment Description *Diesel oil Transfer Pump A (SWC# WD-SWEL-019 & AWC# WB-046)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

Evaluated by: *Mitch Marotz* Date: 11-4-12

Patrick Yearley Date 11-2-12

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

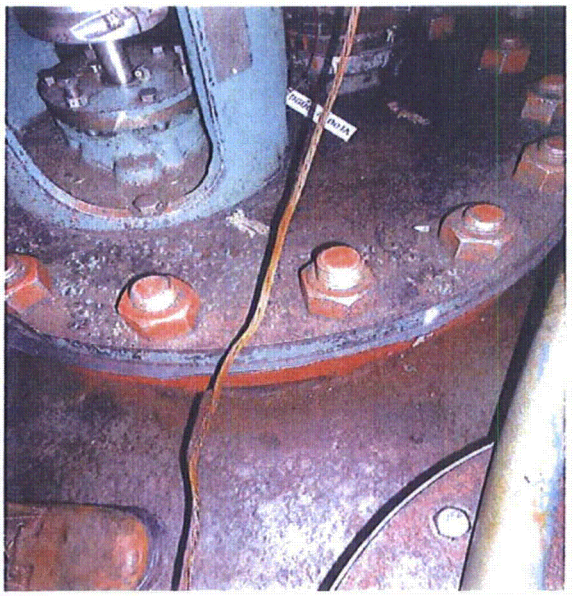
Equipment ID No. *DGDO-P-DOTA* Equip. Class[1] *6*

Equipment Description *Diesel oil Transfer Pump A (SWC# WD-SWEL-019 & AWC# WB-046)*

Photographs

Note:

Note:



Note:

Note:

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *RHR-P-B* Equip. Class[1] *6*

Equipment Description *Residual Heat Removal Pump B (SWC# WD-SWEL-020 & AWC# WB-011)*

Location: Bldg. *Rx* Floor El. *859* Room, Area *SW-QUAD*

Manufacturer, Model, Etc. (optional but recommended) *Bingham Pump Model Civic*

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☒ N☐

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☒ N☐ U☐ N/A☐

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☒ N☐ U☐ N/A☐

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☒ N☐ U☐ N/A☐

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☒ N☐ U☐ N/A☐
   Z-6365 (454205740) and DWL-001 (451205110) were referenced to determine appropriate anchorage.

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *RHR-P-B* Equip. Class[1] *6*

Equipment Description *Residual Heat Removal Pump B (SWC# WD-SWEL-020 & AWC# WB-011)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐
   Overhead lighting, acceptable.

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

Two (2) small base plates close to pump base plate on one side, judged to be acceptable by engineering.

Evaluated by: *Justin Jackson* Justin Jackson Date: 10/26/12

James McKinney James McKinney 10/21/12

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *RHR-P-B* Equip. Class[1] *6*

Equipment Description *Residual Heat Removal Pump B (SWC# WD-SWEL-020 & AWC# WB-011)*

Photographs

Note:	**Note:**
Note:	**Note:**

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *SW-AOV-2797BAV* Equip. Class[1] *7 Fluid-Operated Valves*

Equipment Description *DG1 Supply (SWC# WD-SWEL-021 & AWC# WB-044)*

Location: Bldg. *DG2* Floor El. *903* Room, Area *DG2*

Manufacturer, Model, Etc. (optional but recommended) *Fisher 6-150# Butterfly Valve*

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☐ N☒
   In line valve

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☐ N☐ U☐ N/A☒

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☐ N☐ U☐ N/A☒

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☐ N☐ U☐ N/A☒

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☐ N☐ U☐ N/A☒

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *SW-AOV-2797BAV* Equip. Class[1] *7 Fluid-Operated Valves*

Equipment Description *DG1 Supply (SWC# WD-SWEL-021 & AWC# WB-044)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

Evaluated by: *William Price* Date: 10-16-12

Patrick Yearley 10-16-12

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *SW-AOV-2797BAV* Equip. Class[1] *7 Fluid-Operated Valves*

Equipment Description *DG1 Supply (SWC# WD-SWEL-021 & AWC# WB-044)*

Photographs

Note:	**Note:**
Note:	**Note:**

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *AS-AOV-TCV1089B* Equip. Class[1] *7 Fluid-Operated Valves*

Equipment Description *AC-DG-1D Supply (SWC# WD-SWEL-022 & AWC# WB-048)*

Location: Bldg. *DG2* Floor El. *917* Room, Area *DG2-917*

Manufacturer, Model, Etc. (optional but recommended) *Honeywell 2 Valve V5011*

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☐ N☒

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☐ N☐ U☐ N/A☒

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☐ N☐ U☐ N/A☒

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☐ N☐ U☐ N/A☒

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☐ N☐ U☐ N/A☒

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *AS-AOV-TCV1089B* Equip. Class[1] *7 Fluid-Operated Valves*

Equipment Description *AC-DG-1D Supply (SWC# WD-SWEL-022 & AWC# WB-048)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

Evaluated by: *William Price* Date: 10/16/12

Patrick Yearley 10/16/12

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *AS-AOV-TCV1089B* Equip. Class[1] *7 Fluid-Operated Valves*

Equipment Description *AC-DG-1D Supply (SWC# WD-SWEL-022 & AWC# WB-048)*

Photographs

Note:	**Note:**
Note:	**Note:**

Status: Y☐ N☒ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *MS-AOV-A080B* Equip. Class[1] *7 Fluid-Operated Valve*

Equipment Description *Main Steam Isolation Valve B - Inboard (SWC# WD-SWEL-023 & AWC# WB-058)*

Location: Bldg. *Rx* Floor El. *901* Room, Area *Drywell-901 (East)*

Manufacturer, Model, Etc. (optional but recommended) *Rockwell 24 MSI V Model 1612 JMMNY*

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☐ N☒

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☐ N☐ U☐ N/A☒

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☐ N☐ U☐ N/A☒

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☐ N☐ U☐ N/A☒

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☐ N☐ U☐ N/A☒

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☐ N☒ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *MS-AOV-A080B* Equip. Class[1] *7 Fluid-Operated Valve*

Equipment Description *Main Steam Isolation Valve B - Inboard (SWC# WD-SWEL-023 & AWC# WB-058)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☐ N☒ U☐
Conduit support clamp loose. CR-CNS-2012-07392

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

CR-CNS-2012-07392

Evaluated by: *William Price* Date: 10-20-12

James McKinney 10/20/12

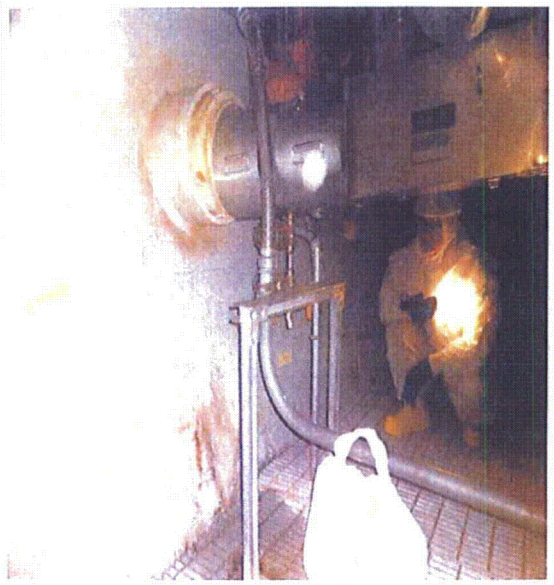
Status: Y☐ N☒ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *MS-AOV-A080B* Equip. Class[1] *7 Fluid-Operated Valve*

Equipment Description *Main Steam Isolation Valve B - Inboard (SWC# WD-SWEL-023 & AWC# WB-058)*

Photographs



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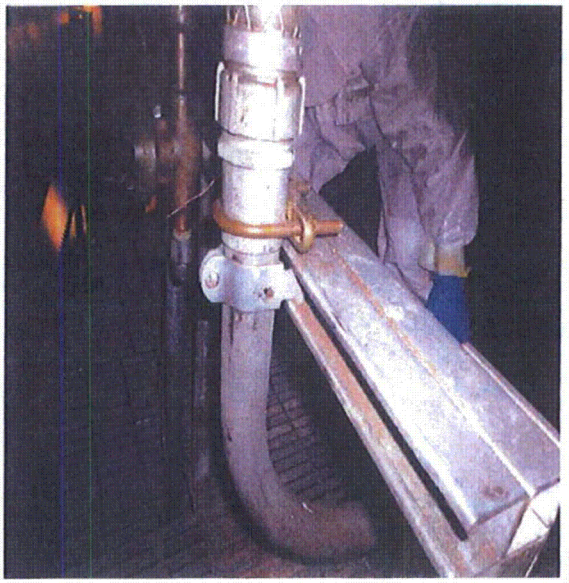


Note:

Note:

Note:

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *MS-RV-71FRV* Equip. Class[1] *7 Fluid-Operated Valves*

Equipment Description *Safety Relief Valve- Main Steam Line C (SWC# WD-SWEL-024 & AWC# WB-059)*

Location: Bldg. *Rx* Floor El. *921* Room, Area *Drywell-921 (East)*

Manufacturer, Model, Etc. (optional but recommended) *Target-Rock 6x10 S.R.V. Model 7567F*

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☐ N☒

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☐ N☐ U☐ N/A☒

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☐ N☐ U☐ N/A☒

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☐ N☐ U☐ N/A☒

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☐ N☐ U☐ N/A☒

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *MS-RV-71FRV* Equip. Class[1] *7 Fluid-Operated Valves*

Equipment Description *Safety Relief Valve- Main Steam Line C (SWC# WD-SWEL-024 & AWC# WB-059)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

Evaluated by: *William Price* William Price Date: 10-19-12

James McKinney James McKinney 10/19/12

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *MS-RV-71FRV* Equip. Class[1] *7 Fluid-Operated Valves*

Equipment Description *Safety Relief Valve- Main Steam Line C (SWC# WD-SWEL-024 & AWC# WB-059)*

Photographs

Note:	**Note:**
Note:	**Note:**

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *PC-AOV-243AV* Equip. Class[1] *7*

Equipment Description *Suppression Chamber Vacuum Relief Valve (SEC# WD-SWEL-025 & AWC# WB-003)*

Location: Bldg. *Rx* Floor El. *881* Room, Area *SW-Torus*

Manufacturer, Model, Etc. (optional but recommended) *Allis-Chalmers Model 150 FR 20 Butterfly Valve with Piston-Type Act.*

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☐ N☒

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☐ N☐ U☐ N/A☒

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☐ N☐ U☐ N/A☒

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☐ N☐ U☐ N/A☒

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☐ N☐ U☐ N/A☒

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *PC-AOV-243AV* Equip. Class[1] *7*

Equipment Description *Suppression Chamber Vacuum Relief Valve (SEC# WD-SWEL-025 & AWC# WB-003)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☒ N☐ U☐ N/A☐

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☒ N☐ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

Operator configuration matches drawing CNS-PC-5.

Evaluated by: *Justin Jackson* Justin Jackson Date: *10/26/12*

James McKinney James Mc Kinney *10/16/12*

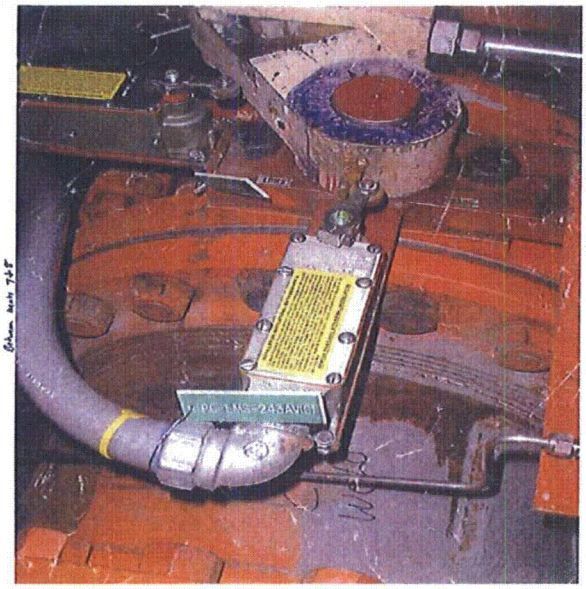
Status: Y☒ N☐ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *PC-AOV-243AV* Equip. Class[1] *7*

Equipment Description *Suppression Chamber Vacuum Relief Valve (SEC# WD-SWEL-025 & AWC# WB-003)*

Photographs



Note: N/A

Note: N/A

Note:

Note:

Status: Y☐ N☒ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *RW-AOV-AO83* Equip. Class[1] *7*

Equipment Description *Drywell Floor Drain Sump Discharge (SWC# WD-SWEL-026 & AWC# WB-005)*

Location: Bldg. *Rx* Floor El. *881* Room, Area *R-881-Above NW-Torus*

Manufacturer, Model, Etc. (optional but recommended) *Anchor Valve Co. 3-150# Gate*

Instructions for Completing Checklist

This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

Anchorage

1. Is the anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)? Y☐ N☒

2. Is the anchorage free of bent, broken, missing or loose hardware? Y☐ N☐ U☐ N/A☒

3. Is the anchorage free of corrosion that is more than mild surface oxidation? Y☐ N☐ U☐ N/A☒

4. Is the anchorage free of visible cracks in the concrete near the anchors? Y☐ N☐ U☐ N/A☒

5. Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Y☐ N☐ U☐ N/A☒

6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions? Y☒ N☐ U☐
   Valve, therefore no anchorage

[1] Enter the equipment class name from Appendix B: Classes of Equipment.

Status: Y☐ N☒ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *RW-AOV-AO83* Equip. Class[1] *7*

Equipment Description *Drywell Floor Drain Sump Discharge (SWC# WD-SWEL-026 & AWC# WB-005)*

Interaction Effects

7. Are soft targets free from impact by nearby equipment or structures? Y☐ N☒ U☐ N/A☐
   ~1/8" from "B" line if stainless steel compression fitting elbow is ~1/8" from "B" line strut support. If pressure is lost due to adverse seismic interaction, it may affect the ability of the AOV to perform it's intended safety function. CR-CNS-2012-07552.

8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment? Y☒ N☐ U☐ N/A☐

9. Do attached lines have adequate flexibility to avoid damage? Y☒ N☐ U☐ N/A☐

10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects? Y☐ N☒ U☐

Other Adverse Conditions

11. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment? Y☒ N☐ U☐

Comments (Additional pages may be added as necessary)

CR-CNS-2012-07552

Evaluated by: *Justin Jackson* Justin Jackson Date: 10/26/12

James McKinney James McKinney 11/5/12

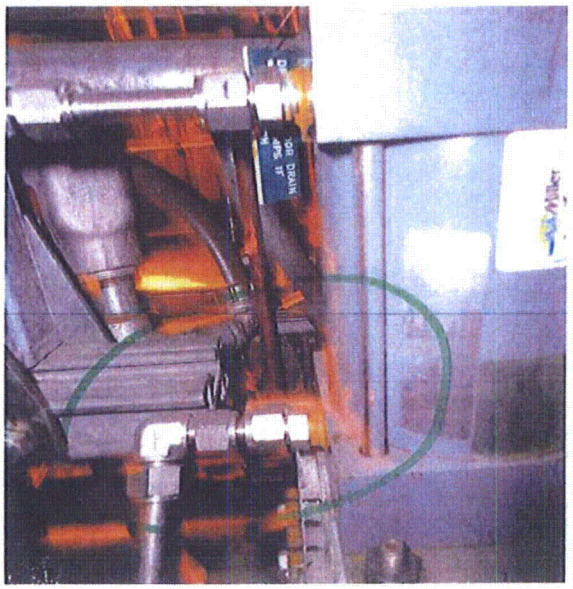
Status: Y☐ N☒ U☐

Seismic Walkdown Checklist (SWC)

Equipment ID No. *RW-AOV-AO83* Equip. Class[1] *7*

Equipment Description *Drywell Floor Drain Sump Discharge (SWC# WD-SWEL-026 & AWC# WB-005)*

Photographs



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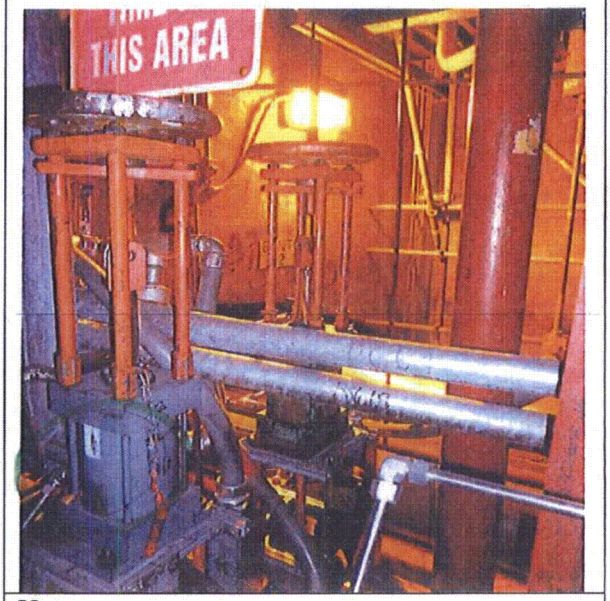

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