**Edwin I. Hatch Nuclear Plant – Unit 2**
**Seismic Recommendation 2.3 Walkdown Report Requested by NRC Letter, *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 Daiichi Accident*, dated March 12, 2012**

**Enclosure 1**

**Hatch Unit 2 Seismic Walkdown Report for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic**

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Edwin I. Hatch Unit 2 SEISMIC WALKDOWN REPORT, RER SNC425082

For

Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic

Prepared by: David V. Lee FOR WINSTON STEWART PER TELECON Date: 11-26-2012
Winston Stewart

Reviewed by: [signature] FOR PATRICK KELLY PER TELECON Date: 11-26-2012
Patrick Kelly

Approved by: (ENERCON) [signature] Date: 11-26-2012
Project Manager or Designee
Bill Henne

Approved by:
(SNC) [signature] Date: 11-26-2012
Technical Lead or Designee/
Peer Review Team Leader
Melanie Brown

Approved by:
(SNC) [signature] Date: 11/26/2012
Project Manager or Designee
David Whitman

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## EXECUTIVE SUMMARY

The Seismic Walkdowns at Hatch Unit 2 in response to the NRC 50.54(f) letter dated March 12, 2012, "Enclosure 3, Recommendation 2.3: Seismic" are not complete as all items on the SWEL have not been accessible. A supplementary report will be required. The walkdowns are being performed using the methodology outlined in the NRC endorsed "Seismic Walkdown Guidance for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic" (EPRI Report number 1025286). Plant Hatch Unit 2 had no significant degraded, non-conforming or unanalyzed conditions that warranted modification to the plant. Plant Hatch Unit 2 had no as-found conditions that would prevent SSCs from performing their required safety functions.

## 1.0 SCOPE AND OBJECTIVE

The objective of this report is to document the results of the Seismic Walkdowns at E. I. Hatch Unit 2 in response to the NRC 50.54(f) letter dated March 12, 2012, "Enclosure 3, Recommendation 2.3: Seismic" (Reference 10.1).

The Seismic Walkdowns followed the guidance contained in EPRI Report 1025286 (Reference 10.2), which was endorsed by the NRC on May 31, 2012. The scope of the walkdowns was to identify potentially degraded, unanalyzed, or nonconforming conditions relative to the seismic licensing basis.

The 2.3: Seismic Walkdowns for Hatch Unit 2 are not complete as all items on the SWEL have not been accessible. A supplementary report will be required. This report documents the findings from all Seismic Walkdowns and Area Walk-bys completed to date.

## 2.0 SEISMIC WALKDOWN PROGRAM IMPLEMENTATION APPROACH

The requirements of the 50.54(f) Letter are satisfied by application of and compliance with the NRC endorsed methodology provided in EPRI Report 1025286 (Reference 10.2). In accordance with EPRI Report 1025286 (Reference 10.2), the following topics are addressed in this report:

- Documentation of the seismic licensing basis for the SSCs in the plant (Section 3.0);
- Assignment of appropriately qualified personnel (Section 4.0);
- Reporting of actions taken to reduce/eliminate seismic vulnerabilities identified by the Individual Plant Examination for External Events (IPEEE) program (Section 5.0);
- Selection of SSCs to be inspected in the plant (Section 6.0);
- Performance of the Seismic Walkdowns and Area Walk-bys (Section 7.0);
- Evaluation of potentially adverse seismic conditions with respect to the seismic licensing bases (Section 8.0); and
- Performance of Peer Reviews (Section 9.0).

While the Seismic Walkdowns were in progress at Hatch Unit 2, supplemental guidance/clarification for opening cabinets to inspect for adverse conditions was received on September 18, 2012. This required the opening of cabinets, electrical boxes, and switchgear to inspect the internals for potentially adverse seismic conditions, even when opening the components was not required to inspect the anchorage. Implementation of the supplemental guidance was incorporated into the walkdowns by first identifying the affected components.

During the Seismic Walkdowns of Hatch Unit 2, electrical cabinets (where no extensive disassembly was required) were opened to inspect the cabinet internals for mounting of internal components, inspect the condition of fasteners of adjacent cabinets, and confirm the absence of any other adverse seismic conditions. The Seismic Walkdown Engineers (SWE) followed the supplemental guidance for all cabinets that were accessible during plant operation, even where opening the cabinets was not required to inspect the anchorage. However, some that could not be opened (due to personnel safety or due to the sensitivity of the equipment) were scheduled during an outage to have the component doors opened.

Section 7.0 identifies cabinets that were inaccessible for internal inspections. Table 7-1 and Table 7-2 provide the schedule to complete the cabinet internal inspections.

## 3.0 SEISMIC LICENSING BASIS SUMMARY

This section provides a summary of the licensing bases for the Seismic Category I Structures, Systems, and Components (SSCs) in the plant. It includes a discussion of the Design Basis Earthquake (DBE) and the codes and standards used in the design of the Seismic Category I SSCs for meeting the plant-specific seismic licensing basis requirements.

### 3.1 DESIGN BASIS EARTHQUAKE

The plant site geologic and seismologic investigations are covered in Section 2.5 of the Hatch Unit 2 Final Safety Analysis Report (FSAR). Based on this data, the peak ground accelerations for the Safe Shutdown Earthquake (SSE) (referred to as the Design Basis Earthquake - DBE) and Operating Basis Earthquake (OBE) are established as 0.15 g and 0.08 g, respectively, as discussed in subsection 2.5.2 of the Hatch Unit 2 FSAR (Reference 10.7).

The basic description of the earthquake is provided by spectrum response curves. Separate curves are used for the OBE of 0.08 g horizontal acceleration and the DBE of 0.15 g horizontal acceleration. The spectrum response curves are provided in FSAR, Figures 3.7A-1 and 3.7A-2 for OBE and DBE respectively. The response of the structure to the earthquake is obtained by using the spectrum response technique. Appropriate response levels are read from the earthquake spectrum curve corresponding to the natural frequencies of the structure.

During the original design of Plant Hatch a set of seismic response spectra was developed by GE using the modified El Centro earthquake ground motion, as discussed in the Hatch Unit 2 FSAR, Section 3.7A (Reference 10.7).

In 1984 another set of spectra was generated to correct a broadening error found in the original spectra. The 1984 spectra were generated using the artificial time histories that more closely enveloped the ground spectra. These are the Seismic Floor Response Spectra of Record (FRS of Record).

In 1989 a Seismic Margins Assessment (SMA) was performed in part to resolve the errors in peak broadening and soil velocity found in the 1984 spectra. The effect of the soil velocity error is that the peak acceleration for each spectrum is shifted to a higher frequency content. Therefore, a new non-design basis set of spectra was generated using seismic margin techniques for use in the SMA. These spectra are called the Seismic Margin Earthquake (SME) spectra. The SME spectra are based on a maximum ground horizontal acceleration of 0.3 g, which is twice that of the Plant Hatch DBE (0.15 g).

As a result of the SMA, the NRC concluded that the spectra used in the design of Plant Hatch resulted in a safe overall design. The NRC determined that the FRS of Record was adequate as the licensing basis spectra. As recognition of the shifting of the maximum seismic response to a higher frequency,

Southern Nuclear elected to consider the SME spectra, factored by ½ to account for the increased ground input, in conjunction with the design basis earthquake (DBE) for all designs. This practice results in a seismic demand that is more conservative than that which would result from a corrected FRS, but avoids a license revision. The NRC agreed with this approach and the NRC also agreed that the SME spectra, when reduced by a factor of one-half (½ SME), best approximates current seismic regulatory requirements for Plant Hatch.

POWER GENERATION DESIGN BASES

Seismic Category I systems, structures and components are designed so that stresses remain within normal code allowable limits during the OBE and to ensure that they will perform their safety-related functions during and/or after a DBE.

MAJOR COMPONENT DESIGN BASES

The horizontal and vertical OBE and DBE in-structure response spectra curves form the basis for the seismic qualification and design of Category I SSCs and for demonstrating the structural integrity of Seismic Category 2 SSCs, where required. In addition, systems running between structures shall be designed to withstand the seismic relative displacements.

The seismic analysis of safety related systems, equipment, and components is generally based on the response spectra method. Alternatively, Seismic Category I equipment is analyzed using the methodology based on earthquake experience data developed by the Seismic Qualification Utility Group (SQUG) and documented in the Generic Implementation Procedure (GIP), Revision 2, plus any addition to the GIP reviewed and accepted by the NRC for resolving Unresolved Safety Issue A-46 in response to NRC Generic Letter 87-02. The SQUG GIP may be used to verify the seismic adequacy of currently installed equipment after the equipment has been walked down and any outliers resolved. New and replacement equipment within the scope of the GIP may also be seismically qualified using the same SQUG methodology. This alternative method is acceptable where no specific NRC commitment to use IEEE 344-1975 has been made.

## 3.2 DESIGN CODES, STANDARDS, AND METHODS

An extensive list of design codes, standards, methods, studies and tests utilized for seismic design is provided in the FSAR (Reference 10.7). Examples of the pertinent codes, standards, and methods used for the design of Seismic Category I structures, systems and components is provided here:

- USAS B31.1, Code for Power Pressure Piping, 1967 Edition
- USAS B31.7, Nuclear Power Piping, 1969 Edition
- 10 CFR 50, Appendix A, General Design Criterion 2, "Design Basis for Protection Against Natural Phenomena"
- IEEE 323-1971, Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations
- IEEE 323-1974, Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations
- IEEE 344-1971, IEEE Recommended Practice for Seismic Qualification of Class 1E Equipment for Nuclear Power Generation Stations
- IEEE 344-1975, IEEE Recommended Practice for Seismic Qualification of Class 1E Equipment for Nuclear Power Generation Stations
- NRC Generic Letter 87-02, Verification of Seismic Adequacy of Mechanical and Electrical Equipment In Operating Reactors (USI A-46)
- Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Plant Equipment, Revision 2, Seismic Qualification Utility Group (SQUG)
- American Institute of Steel Construction (AISC), 7$^{th}$ Edition

## 4.0 PERSONNEL QUALIFICATIONS

Table 4-1 identifies the project team members and their project responsibilities per EPRI Report 1025286 (Reference 10.2). Table 4-2 identifies the Peer Review Team members and responsibilities. Section 4.1 provides an overview of the project responsibilities. Section 4.2 includes brief experience summaries for all project personnel in alphabetical order.

**Table 4-1 Project Team Members and Responsibilities**

| Name | Site Point of Contact (POC) | Equipment Selection / IPEEE Reviewer | Plant Operations | Seismic Walkdown Engineer (SWE) | Licensing Basis Reviewer |
|---|---|---|---|---|---|
| Warren Barr | | X | | | |
| Chris Burke | | X | X | | |
| David Edenfield | | X | | | |
| Jeffrey Horton | | | | X | X |
| Patrick Kelly | | | | X | X |
| Kursat Kinali | | | | X | X |
| Johnathon McFarland | | | | X | X |
| Michael Steele* | X | X | | X | X |
| Winston Stewart* | | | | X | X |
| James Tootle | | X | X | | |
| Juan Vizcaya | | | | X | X |
| Wesley Williams | | X | | X | X |
| Alan Wolfe | | X | X | | |

**Table 4-2 Peer Review Team Members and Responsibilities**

| Name | Peer Review Team Leader | SWEL Peer Reviewer | Walkdown Peer Reviewers | Licensing Basis Peer Reviewer | Submittal Report Peer Reviewers |
|---|---|---|---|---|---|
| Robert Ashworth* | | X | X | X | X |
| Melanie Brown* | X | X | | X | X |
| Richard Starck* | | X | | | X |
| Kenneth Whitmore* | | X | X | X | X |

Notes (Table 4-1 and Table 4-2):

1) * Indicates Seismic Capability Engineer

2) As stated in Section 7.0, all potentially adverse conditions were entered into the plant Corrective Action Program (CAP) system. However, as part of the process of entering the condition into the CAP, the SWEs made a preliminary assessment of the condition with respect to the plant licensing basis. Further licensing basis reviews were performed as discussed in Section 8.0 as part of the CAP resolution process by personnel not directly involved in the walkdowns.

## 4.1 OVERVIEW OF PROJECT RESPONSIBILITIES

The Site Point of Contact (POC) is a site engineer from Southern Nuclear that has experience with the site equipment, site procedures, plant operations, and overall personnel organization. The site POC coordinated site access for walkdown personnel and any resources required for the walkdowns such as inspection equipment and support from plant operations. The POC was responsible for development of the walkdown schedule and any updates to the schedule based on equipment availability.

Equipment Selection Personnel (ESP) were responsible for identifying the sample of SSCs for the Seismic Walkdowns. The ESP have knowledge of plant operations, plant documentation, and associated SSCs. The ESP also have knowledge of the IPEEE program. For this project, site engineers and plant operations personnel participated in the equipment selection. The ESP also performed the responsibilities of the IPEEE Reviewers. The IPEEE Reviewers also ensured that the walkdown scope included a sample of equipment that had IPEEE seismic vulnerabilities.

Plant Operations Personnel provided detailed review of the sample of SSCs to ensure the walkdown scope included equipment located in a variety of environments, equipment in a variety of systems, and equipment accessible for a walkdown. For the Hatch Unit 2 project, the Plant Operations Personnel were either former or currently licensed Senior Reactor Operators.

The SWEs were trained on the NTTF Recommendation 2.3: Seismic, and on the material contained in EPRI Report 1025286 (Reference 10.2). SWEs who had previously completed the Seismic Walkdown Training Class developed by the SQUG were not required to complete training on the NTTF Seismic recommendations but were trained on the differences between SQUG activities and activities associated with the NTTF Seismic recommendations.

The Licensing Basis Reviewer was responsible for determining whether any potentially adverse seismic conditions identified by the SWEs met the plant seismic licensing basis. The Licensing Basis Reviewer has knowledge of and experience with the seismic licensing basis and documentation for the SSCs at Hatch Unit 2.

A Peer Review Team was formed for this project to provide both oversight and review of all aspects of the walkdowns. The Peer Review Team members have extensive experience in seismic design and qualification of structures, systems and components as well as extensive field experience. The Peer Review Team for this project interfaced with the ESP and SWEs to ensure that the walkdown program satisfied the guidance in EPRI Report 1025286 (Reference 10.2).

## 4.2 TEAM EXPERIENCE SUMMARIES

Robert Ashworth, SCE (MPR)

Mr. Ashworth has more than six years of experience providing engineering solutions for a wide variety of nuclear power plant components and systems. His experience includes equipment walkdowns at industrial facilities to assess material condition, structural modeling and analyses; and seismic qualification in accordance with current industry standards for mechanical and electrical equipment in nuclear power plants. Mr. Ashworth has completed the training course for the EPRI Report 1025286 and is also a Seismic Capability Engineer (SCE) as defined in the SQUG GIP for resolution of Unresolved Safety Issue (USI) A-46.

Warren Barr (SNC)

Mr. Barr is currently a Senior Plant Support Engineer at the Hatch Plant. He has over forty-three (43) years of on-site and off-site nuclear power related experience in the area of mechanical design and engineering for Southern Company nuclear units. Experience consists of new plant design, unit start-up, unit recovery, modification design and implementation, system design and operation, engineering support, outage support, maintenance support, problem resolution, vendor interface, project management, and project and group coordination and supervision.

Melanie Brown, SCE (SNC)

Ms. Brown has over 31 years of experience with Southern Company, the majority of which has been serving the nuclear fleet. Ms. Brown's most recent assignment was as a Seismic Qualification Engineer in the Fleet Design Department, where she was responsible for performing activities associated with the Governance, Oversight, Support, and Perform (GOSP) Model including:

- Management of the seismic design bases,
- Seismic equipment qualification,
- Seismic evaluation of plant structures and components,
- Design documentation and configuration management.

She is currently serving as the Southern Nuclear Seismic Technical Lead for the Fukushima Near-Term Task Force (NTTF) 2.3 Seismic Walkdowns for all three Southern Nuclear plants.

Chris Burke (SNC)

Mr. Burke is currently the Operations Support Manager for the Hatch site. He has a Bachelor of Science Degree in Aerospace Engineering and 15 years of nuclear plant experience within the Engineering and Operations departments. Mr. Burke obtained a Senior Reactor Operator license from the NRC in 2005. In addition to his current function, Mr. Burke has served in various leadership roles in support of plant operation including Shift Support Supervisor, Shift Supervisor, and Shift Manager.

David Edenfield (SNC)

Mr. Edenfield is currently the Risk Analyst for the Hatch Site. He has a Bachelor of Science Degree in Electrical Engineering and 34 years of nuclear plant experience including 10 years in plant construction and 24 years in plant support at Plant Hatch. Some of his related experience and responsibilities includes, Maintenance Rule Expert Panel member, On-site administrator for EPRI software package EOOS (Equipment Out of Service), reviewer for all design change packages for EOOS model impact, High and Low Voltage Switchyard System Engineer, and Component Engineer for Relays (Protective, Control, and Timing) and Large Transformers.

Jeffrey Horton, SWE (ENERCON)

Mr. Horton, P.E., is a degreed Professional Engineer with 37 years of experience specializing in applied mechanics with an emphasis on structural analysis of mechanical components and piping. His experience includes structural and thermal design of Nuclear Pressure Vessels, structural design of Nuclear Pipe Systems, Pipe Support Analysis, and Concrete Design. Mr. Horton holds a Bachelor of Science degree in Aerospace Engineering and a Master of Science degree in Material Science specializing in Solid Mechanics. Mr. Horton has performed numerous ANSI B31.1, B31.7, ASME Section I, III, and VIII component structural calculations and design verifications for Oyster Creek, TMI-1 and other nuclear facilities. Mr. Horton has used AutoPIPE since 1989 for pipe stress evaluations at Oyster Creek, TMI-1 and other nuclear facilities. Most recently, Mr. Horton was involved in the pipe stress and pipe support analysis for the James A. Fitzpatrick HPCI Steam Trap Valve replacement project, and the Oyster Creek 2010 buried pipe project where he performed the pipe design for the Condensate Storage Tank overflow pipe using AutoPIPE. Mr. Horton has significant field experience including extended site assignments at Oyster Creek, TMI and Perry, and has performed equipment walkdowns at numerous facilities. Mr. Horton completed the EPRI training on Near Term Task Force Recommendation 2.3 – Plant Seismic Walkdowns as an SWE.

Patrick Kelly, SWE (ENERCON)

Mr. Kelly, P.E., has a Master's degree in Civil Engineering with over 5 years of engineering experience in commercial and nuclear plant design having prepared and developed several design change packages, calculations, evaluations and engineering judgments. Mr. Kelly brings considerable experience in structural analysis, building evaluations, conduit evaluations, and miscellaneous structural analysis. He has supported various security related projects at SNC. Additionally, Mr. Kelly was the lead civil engineer on the recent detailed and final designs packages for the Unit 1 and 2 Diesel Generator Excitation Panel Replacement projects at Plant Hatch. Mr. Kelly completed the EPRI training on Near Term Task Force Recommendation 2.3 – Plant Seismic Walkdowns as an SWE.

Kursat Kinali, SWE (ENERCON)

Mr. Kinali, Ph.D., P.E., is a Civil/Structural Engineer and Responsible Engineer for modifications. Dr. Kinali has M.S. and Ph.D. degrees in Structural Engineering with industry experience in commercial and nuclear design. He is a registered Professional Engineer. He is experienced in seismic analysis, reinforced concrete design, and seismic performance assessment of existing structures. Dr. Kinali worked on Southern California Edison's SONGS Units 3&4 for design of removable bar panels on a Large Organism Exclusion Device (LOED). He was the responsible structural engineer for designing and detailing the stainless steel removable bar panels. These frames employed a fail-open mechanism that prevents damage to the rest of the LOED frame during extreme wave or seismic events. Dr. Kinali was one of the responsible engineers for an Engineering Change (EC) package at Robinson which involved ballistic resistant enclosure (BRE) replacement. He was also the primary reviewer for BRE drop analysis for the Farley Nuclear Plant. He reviewed the calculation which investigated the possible effects of BRE drop on safety-related underground features. For the last couple years, he has been working on numerous design change packages associated with 10 CFR 73.55 security compliance projects for all four Progress Energy's plants, where he was responsible for designing/detailing the reinforced concrete foundations for buildings and miscellaneous equipment, designing electrical duct banks running under a heavy-haul path, preparing/reviewing calculations and drawings for conduit supports and miscellaneous component mountings, and preparing/reviewing (EC) packages. Mr. Kinali completed the EPRI training on Near Term Task Force Recommendation 2.3 – Plant Seismic Walkdowns as an SWE.

Johnathon McFarland, SWE (ENERCON)

Mr. McFarland, P.E., is a Civil/Structural Engineer providing engineering support for various nuclear generating stations. Mr. McFarland has a B.S. in Civil Engineering and over 5 years of experience in civil/structural design, including ECCS Suction Strainers, seismic and hydrodynamic analysis, yard modifications and field engineering. Mr. McFarland has significant experience at Florida Power and Light's Turkey Point Plant, and at the Wolf Creek Nuclear Operating Station (WCNOC). Mr. McFarland supported various modifications at WCNOC including providing outage support. Additionally, Mr. McFarland provided EPU related support at Turkey Point including the analysis and walkdowns of structural systems. He supported structural analysis of shipping casks. Mr. McFarland completed the EPRI training on Near Term Task Force Recommendation 2.3 – Plant Seismic Walkdowns as an SWE.

Richard Starck, SCE (MPR)

Mr. Starck is a registered Professional Engineer with more than 30 years of experience in seismic qualification of nuclear plant equipment. He is the principal author of the EPRI Seismic Walkdown Guidance Document (EPRI Report 1025286, Reference 10.2). He developed and taught the six sessions of the NTTF 2.3 Seismic Walkdown Training Course to more than 200 engineers. He has provided technical oversight of work for various SQUG projects aimed at resolving USI A-46. Mr. Starck developed for SQUG the generic guidelines, criteria, and procedure for identifying safe shutdown equipment for resolution of USI A-46, is the editor and principal author of the SQUG GIP, and has interfaced with the NRC Staff and the SQUG Steering Group to resolve open issues on several revisions of the GIP. Mr. Starck is a SCE and has performed Seismic Walkdowns and evaluations of nuclear plant electric and mechanical equipment as part of the NRC required USI A-46 program. This work included equipment qualification, anchorage evaluation, seismic interaction review, outlier resolution, and operability determination.

Michael Steele, SCE (SNC)

Mr. Steele is currently a Principal Design Engineer at Plant Hatch. He has a Bachelor's of Science Degree in Civil Engineering and 20 years of experience as a structural engineer. He is a qualified SQUG Seismic Capability Engineer and Certified Lead Auditor. He has comprehensive and in-depth technical experience in nuclear facilities structural design, construction, modification and maintenance.

Winston Stewart, SCE (ENERCON)

Mr. Stewart is a Mechanical Engineer with over eight years of experience in various capacities including: Modification Engineer, Engineering Mentor, 10CFR50.59 Evaluator, Apparent Cause Evaluator, Contract Administration and Designated Representative, Project Manager, Procedure Technical Reviewer, and Environmental Monitoring Team Leader for Emergency Response Organization. Mr. Stewart was responsible for the preparation of technical evaluations for various configuration changes to plant systems, structures, or components; as well as the preparation and revision of civil/structural calculations, pipe stress calculations, and other design documents. Mr. Stewart served as subject matter expert for Pipe Stress Analysis and Pipe Flaw Evaluation (ASME B31.1, Section III and Section XI). During this time he qualified as SQUG Seismic Capability Engineer. Mr. Stewart completed the EPRI training on Near Term Task Force Recommendation 2.3 – Plant Seismic Walkdowns as an SWE.

James Tootle, Jr. (SNC)

Mr. Tootle is the Hatch Severe Accident Management Program Manager. He holds a Bachelor's Degree in Civil Engineering Technology from Georgia Southern University. He has 30 years of experience at an operating nuclear plant. Mr. Tootle is currently licensed as an SRO and served ten years as Shift Support Supervisor. He also has supervisory experience in Operations Training and Nuclear Oversight. Mr. Tootle's certifications include the following:

- Shift Supervisor Qualified (1998-2003)
- Shift Support Supervisor (1993-2003)
- Senior Reactor Operator (BWR) licensed (1993-present)
- Station Nuclear Engineering / Shift Technical Advisor Certification - General Electric (1990)

Juan Vizcaya, SWE (ENERCON)

Mr. Vizcaya has over 30 years of structural engineering and design experience. He has significant experience being the structural lead engineer on ISFSI projects and overall nuclear plant modifications and has a wide range of design/engineering experience. Projects range from the seismic analysis and design of concrete and steel structures and concrete pads to the analysis and design of restraint systems for a vertical cask vendor stack-up configurations. Other projects include heavy load drop assessments and the analysis and design of protective structures, foundations and various mechanical and structural modifications using sophisticated finite element models. Mr. Vizcaya is skilled at using finite element analyses in the design process, and at the practical design of mechanical components, along with concrete and steel structures. He leads a group structural staff on issues involving structures, stress analysis, and site work such as layout, excavation, roads, drainage and subterranean structures. Mr. Vizcaya has extensive field experience including during construction of the Laguna Verde Nuclear Plant. Mr. Vizcaya completed the EPRI training on Near Term Task Force Recommendation 2.3 – Plant Seismic Walkdowns as an SWE.

Kenneth Whitmore, SCE (ENERCON)

Mr. Whitmore is a Registered Professional Engineer with more than 30 years of experience in seismic design and seismic equipment qualification in nuclear power plants. Mr. Whitmore is a Seismic Capability Engineer that was involved in the development of the SQUG methodology for verification of nuclear plant components. Specifically, Mr. Whitmore served on the sub-committee that developed the SQUG methodology for evaluation of raceways and on the sub-committee that performed the peer review of the SQUG walkdown training class. Mr. Whitmore performed A-46 and IPEEE walkdowns at Oyster Creek and Three Mile Island and has subsequently performed SQUG evaluations at numerous nuclear power plants. Mr. Whitmore served as both Chairman and Technical Chairman of the Seismic Qualification Reporting and Testing Service (SQRTS), has witnessed numerous seismic tests and is a recognized industry expert in seismic qualification of components. Mr. Whitmore has significant experience in all aspects of structural analysis and design and has extensive experience in performing plant walkdowns associated with seismic issues. Mr. Whitmore completed the EPRI training on Near Term Task Force Recommendation 2.3 – Plant Seismic Walkdowns as an SWE.

Wesley Williams, SWE (SNC)

Mr. Williams has a degree in Civil Engineering from the University of South Alabama. He is a System Engineer for Southern Nuclear at Plant Hatch in Baxley, GA. He has participated in numerous Structural Monitoring Walkdowns at Plant Hatch which are governed by 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance of Nuclear Power Plants." In addition, Mr. Williams had the opportunity to work in the Civil Design Group at Southern Nuclear Corporate Headquarters as a summer intern before he graduated. Mr. Williams completed the EPRI training on Near Term Task Force Recommendation 2.3 – Plant Seismic Walkdowns as an SWE.

Alan Wolfe (SNC)

Mr. Wolfe has a BS in Nuclear Engineering Technology. He has more than 33 years of experience in the nuclear industry, all in the Operations department at Plant Hatch. He obtained a Reactor Operator's License in 1982 and a Senior Reactor Operator's License in 1987. Mr. Wolfe held positions of System Operator, Licensed Nuclear Plant Operator, Shift Supervisor, Shift Technical Advisor, Shift Manager, and Operations Superintendent prior to retiring in 2010. Following retirement he returned to the plant in January 2012 to support the Severe Accident Management team in response to the accident in Japan.

## 5.0 IPEEE VULNERABILITIES REPORTING

Information on the seismic vulnerabilities identified during the IPEEE program are reported in Attachment 5. Within this context, "vulnerabilities" means seismic anomalies, outliers, or other findings. For each vulnerability, Attachment 5 also reports a description of the action taken to eliminate or reduce the seismic vulnerability.

The Seismic Walkdown Equipment List (SWEL) for Hatch Unit 2 included six (6) components for which seismic vulnerabilities were previously identified during the IPEEE program. During the Seismic Walkdowns, the walkdown teams verified that the resolutions to IPEEE vulnerabilities for 4 of the 6 SWEL components are implemented as stated in the IPEEE outlier resolution (Attachment 5). The extent of this verification is discussed in the individual SWCs for the components with identified IPEEE seismic vulnerabilities.

The following components with IPEEE vulnerabilities could not be verified due to inaccessibility. Completion of the walkdowns, for both components, is deferred until the next refueling outage (2R22) which is scheduled February of 2013.

1) 2R22-S005, 4160V SWGR EMERGENCY BUS 2E – The anchorage was previously determined to be inadequate. Also, there are interaction concerns with the overhead lights. Attachment 5 notes that additional anchorage was installed and the light fixtures were tied up to prevent falling per design change request (DCR) 94-017 and DCR 90-10. However, the Seismic Walkdown team could not verify anchorage since the switchgear could not be opened at that time.

2) 2R22-S007, 4160V SWGR EMERGENCY BUS 2G – The anchorage was previously determined to be inadequate. Attachment 5 notes that additional anchorage was installed per DCR 94-017. However, the Seismic Walkdown team could not verify anchorage since the switchgear could not be opened at that time.

## 6.0 SEISMIC WALKDOWN EQUIPMENT LIST DEVELOPMENT

A team of individuals with extensive knowledge of Plant Hatch systems and components developed the SWEL. Qualifications of the personnel responsible for developing the SWEL are provided in Section 4.0 of this report. The equipment selection personnel used an SNC-template to ensure compliance with EPRI Report 1025286 (Reference 10.2) and consistency across the fleet.

Two SWELs were developed (SWEL 1 and SWEL 2) consistent with the guidance in EPRI Report 1025286 (Reference 10.2). SWEL 1 consists of a sample of equipment related to safe shutdown of the reactor and maintaining containment integrity as described in Section 3.0 of the EPRI Report 1025286 (Reference 10.2). SWEL 2 consists of items related to the spent fuel pool as described in Section 3.0 of the EPRI Report 1025286 (Reference 10.2). The two SWELs form the overall SWEL for the plant. Attachment 1 provides the final SWEL 1 and SWEL 2.

In some cases, components listed on the SWEL were removed from the SWEL or were replaced with equivalent components. These changes were made when it was determined during the Seismic Walkdown that access to the equipment on the original SWEL would be impractical to achieve during a walkdown. For example, components located very high overhead were replaced with equivalent items that could be seen without erecting scaffolding. All such changes meet the provisions of the EPRI Report 1025286 (Reference 10.2). The SWELs provided in Attachment 1 reflect the final SWELs with all changes incorporated.

### 6.1 DEVELOPMENT OF SWEL 1

SWEL 1 was developed using the four screens described in EPRI Report 1025286 (Reference 10.2).

**Screens 1 to 3**

Screens 1 to 3 were used to select Seismic Category I equipment that do not undergo regular inspection and support the five safety functions.

In accordance with the EPRI Report 1025286 (Reference 10.2, Page 3-3), Screens 1 through 3 can be satisfied using previous equipment lists developed for the IPEEE program. Consequently, the Seismic Review Safe Shutdown Equipment List (SSEL) developed for the Hatch Nuclear Plant's response to Generic Letter 88-20 (Reference 10.3) was included in Base List 1 for the development of SWEL 1. Additional items were added to Base List 1 from the USI A-46 Summary Report (Reference 10.9) and the Safe Shutdown Analysis Report (Reference 10.7), Tables 3.A1-1 and 4.A1-1, to provide components to address the twenty-one classes of equipment from Appendix B of the EPRI Report 1025286 (Reference 10.2).

The specific guidance used to create the IPEEE Seismic SSEL was EPRI Report NP-6041, "A Methodology for Assessment of Nuclear Power Plant Seismic Margin" (Reference 10.10). The Seismic SSEL from IPEEE - Seismic was checked and verified to meet the intentions set forth in the EPRI Report 1025286 (Reference 10.2). The intent of the Base List 1 was to provide an equipment list of the SSCs used to safely shut down the reactor and maintain containment integrity following a Design Basis Earthquake. The EPRI Report 1025286 (Reference 10.2, Page 3-1) listed three screens to use in selecting the Base List 1 if a utility was to not start from an existing equipment list used in previous plant evaluations. Applying these three screens would result in an acceptable base list that was comprised of Seismic Category I SSCs associated with maintaining the following five safety functions listed in EPRI Report 1025286 (Reference 10.2):

- Reactor reactivity control
- Reactor coolant pressure control
- Reactor coolant inventory control
- Decay heat removal, and
- Containment function.

The criteria used in selection of the Seismic SSEL are detailed in Section 3.1.2.2 of the IPEEE – Seismic Report (Reference 10.8). Specifically, one preferred and one alternate path capable of achieving and maintaining a safe-shutdown condition for at least 72 hours following a Seismic Margin Earthquake (SME) was selected for each unit. Further, it was assumed that a Small Break Loss of Coolant Accident (SBLOCA) had occurred and as such, the paths were also selected as being capable of mitigating a SBLOCA following an SME.

Therefore, based upon the review of the Base List 1, it was determined that the list satisfied the requirements as specified in the EPRI Report 1025286 (Reference 10.2). Base List 1 is presented in Attachment 1.

**Screen 4**

Screen 4 is the sample considerations to select components from the Base List 1. The selection of components for SWEL 1 was developed through an iterative process that ensured a representative sample (i.e., Screen 4 from EPRI Report 1025286 - Reference 10.2). Various drafts of SWEL 1 were provided to Hatch Licensed Senior Reactor Operators (SROs) for review and input. The SROs identified and recommended inclusion of additional equipment important to plant operations.

The following list summarizes the sample considerations used to develop SWEL 1:

- Variety of systems
- Major new or replacement equipment
- Classes of equipment
- Variety of environments
- Equipment enhanced due to vulnerabilities identified during the IPEEE program
- Risk Significance

Variety of Systems – EPRI Report 1025286 (Reference 10.2) specifies that equipment from a variety of plant systems must be included on the SWEL 1. The systems represented in the Base List were reviewed and components from a majority of these systems are included on the SWEL.

Major New and Replacement Equipment – Major new or replacement equipment installed within the previous 15 years was identified through a search of work order (WO) histories for selected equipment and input from the plant personnel familiar with plant modification and from the PRA group on equipment changes to components that are included in the PRA.

Variety of Equipment Classes – A list of the 21 Classes of Equipment that should be included on the SWEL is provided in Appendix B of the EPRI Report 1025286 (Reference 10.2). SWEL 1 includes components from each equipment class.

Variety of Environments – The EPRI Report 1025286 (Reference 10.2) specifies that the SWEL contain components located in various plant environments, including environments subject to corrosion and high temperatures. SWEL 1 includes equipment in three environment types. These include Harsh (e.g. Reactor Building), Mild (e.g. Control Room, Diesel Generator Building), and Outdoors/Intake Structures (e.g. Plant Service Water Intake Structure, Yard Valve Pits).

IPEEE Vulnerabilities – SWEL 1 includes equipment identified with seismic vulnerabilities identified in Hatch Nuclear Plant's response to Generic Letter 88-20 (Reference 10.3).

Risk Significance – The risk ranking was performed using the at-power internal events PRA model and by identifying those components that, in the model, have a Risk Achievement Worth of 2.0 or greater, or a Risk Reduction Worth of 1.005 or greater. The importance ranking spreadsheet contained in calculation PRA-BC-H-10-008 (Reference 10.6) was the actual document used as a source.

## 6.2 DEVELOPMENT OF SWEL 2

SWEL 2 is developed using four screens described in EPRI Report 1025286 (Reference 10.2). SWEL 2 is presented in Attachment 1.

**Screens 1 to 2**

The equipment selected through Screens 1 and 2 provide any Seismic Category I components associated with the Spent Fuel Pool (SFP) that are also suitable for a walkdown. For Hatch Unit 2, the only Seismic Category 1 equipment associated with the SFP is the Spent Fuel Pool Cooling System. The Base List 2 includes components from the Spent Fuel Pool Cooling System that are suitable for a walkdown per Screens 1 and 2 from EPRI Report 1025286 (Reference 10.2).

**Screen 3**

Screen 3 is the sample considerations that ensure that a broad category of equipment from Base List 2 is included in SWEL 2. These considerations include:

- Variety of systems
- Major new or replacement equipment
- Classes of equipment
- Variety of environments

The Hatch SFP System has a very basic system design with very limited component types. SWEL 2 includes components associated with maintaining seals around the SFP gates, which are Seismic Category I components. There were no new/replacement equipment in SWEL 2 because there have been no major modifications to the Spent Fuel Pool systems that would affect equipment that meets the screening requirements. Equipment associated with cooling of the SFP are located in locked areas (due to radiation) and are not suitable for a walkdown.

The Decay Heat Removal System is the only major new or replaced equipment associated with the SFPs. However, the Decay Heat Removal System is Non-Safety Related and all piping connected to the SFP either terminates greater than 10 feet above the fuel or has anti-siphon holes located greater than 10 feet above the fuel to prevent rapid drain-down of the SFP.

For Hatch Unit 2, SWEL 2 contains all the equipment on Base List 2. Thus, sampling was not a consideration in developing SWEL 2.

**Screen 4**

Screen 4 identifies any items that could potentially lead to rapid drain down of the SFP. These include any penetrations in the SFP that are below 10 feet above the top of the fuel assemblies.

For Hatch Unit 2, there are no SFP penetrations within 10 feet above the fuel in the SFP. All piping connected to the SFP, either terminates more than 10 feet above the fuel or has anti-siphon holes, located more than 10 feet above the fuel, to prevent rapid drain-down of the SFP.

Based on a review of plant documents, the only items that could potentially lead to rapid drain down of the pool are the Seismic Class 2 items that could contribute to deflation of the air seal in the seismic gap located in the transfer canal between the spent fuel pools. Air accumulators and gate seal ball valves that could contribute to deflation of the air gap, if damaged during a seismic event, are included in SWEL 2.

## 7.0 SEISMIC WALKDOWNS AND AREA WALK-BYS

Walkdowns were performed for all components on the (combined) SWEL except for those that were inaccessible (see Section 7.1). A Seismic Walkdown Checklist (SWC) was completed for each component and an Area Walk-by Checklist (AWC) was completed for each area containing equipment on the SWEL. Copies of the SWCs and AWCs are provided in Attachments 3 and 4, respectively.

The personnel performing walkdowns received training on the NTTF 2.3 Seismic Walkdown guidance. Prior to the walkdown teams arriving onsite, walkdown packages were assembled into folders that contained the SWCs and AWCs and other pertinent information (e.g., calculations, test reports, IPEEE walkdowns, equipment location, and layout drawings). Each walkdown team consisted of two SWEs. The walkdown teams spent the first week on site obtaining unescorted plant access and organizing for the walkdowns. Organization included assignment of specific components to the teams; review of the walkdown packages; development of a process for tracking the Seismic Walkdowns and Area Walk-bys; and familiarization with the plant.

The second week began with peer reviewers (Whitmore and Ashworth) providing an overview on the information contained in the EPRI Report 1025286 (Reference 10.2). Expectations for the walkdowns were discussed and questions were answered. After this overview, each walkdown team performed an initial Seismic Walkdown and Area Walk-by. This initial walkdown was performed in the presence of the other teams and at least one peer reviewer. The purpose of this initial walkdown was to ensure consistency between the different teams, to reinforce the expectations for identifying potentially adverse seismic conditions, and to allow team members to provide and obtain feedback.

Following the initial walkdowns, the walkdown teams began performing the Seismic Walkdowns and Area Walk-bys. Support from plant personnel (operators, electricians, engineering) was obtained as required to open equipment and to assist in locating and identifying components. All component Seismic Walkdowns and Area Walk-bys were documented on the SWCs and AWCs, respectively. The final status of all SWCs and AWCs indicated one of the three following statuses:

- "Y" – Yes, the equipment is free from potentially adverse seismic conditions;
- "N" – No, the equipment is not free from at least one potentially adverse seismic condition;
- "U" – Undetermined, a portion(s) of the walkdown could not be completed due to equipment inaccessibility and the condition is not known.

The walkdown focused on anchorage and seismic spatial interactions but also included inspections for other potentially adverse seismic conditions. Anchorage in all cases was considered to be anchorage to

the structure. This included anchor bolts to concrete walls or floors, structural bolts to structural steel and welds to structural steel or embedded plates. For welds, the walkdown team looked for cracks and corrosion in the weld and base metal. Other bolts such as flange bolts on in-line components were not considered to be anchorage. These connections were evaluated and any potentially adverse seismic concerns were documented under "other adverse seismic conditions".

As part of the walkdown, the anchorage of at least 50% of the anchored components was evaluated to verify if the anchorage was consistent with plant documentation. The document that provides the anchorage configuration was identified on the SWC and the anchorage in the field was compared to the information on this referenced document. In cases where the anchorage could not be observed (e. g. where the anchorage is inside a cabinet that could not be opened at the time of the walkdown), the items related to anchorage were marked as "U" (Undetermined) and deferred until equipment is available for inspection. However, all other possible inspections associated with that item were completed and the results were documented on the SWC. These items were considered to be incomplete at the time of this report preparation and have been deferred to a time when they would be available for inspection (see Section 7.1). All "U" items have been deferred until the earliest opportunity during Refueling Outage 2R22 or Refueling Outage 2R23, which are scheduled for February 2013 and February 2015 respectively.

In cases where the Seismic Walkdown team members identified a potentially adverse condition, the condition was noted on the SWC or on the AWC and a CR was written to document and evaluate/resolve the condition. As part of the process of generating the CR, preliminary licensing basis evaluations were performed by the SWEs during the walkdowns. Additionally, detailed licensing basis reviews were conducted as part of the resolution of the CR, as required. Conditions that were not obviously acceptable were documented on the checklists and a basis was provided for why the observed condition was determined to be acceptable.

Area Walk-bys were performed in the rooms containing the SSCs for walkdowns. For cases in which the room where a component was located was large, the extent of the area encompassed by the Area-Walk-by was clearly indicated on the AWCs. For large areas, the walk-by included all structures, systems and components within a 35-foot radius of the equipment being walked down, as described on the AWC. The AWCs are included in Attachment 4.

SWEL 1 Walkdowns

A total of 81 of the 104 SWEL 1 Component Seismic Walkdowns have been performed to date. However 3 must be revisited in order to inspect for other adverse conditions inside the cabinets. In addition, 23 of the 104 SWEL 1 components were delayed due to inaccessibility. The schedule for

performing the remaining component walkdowns is presented in Tables 7-1 and 7-2. All areas of the plant that contain items on the SWEL were included in the Area Walk-bys.

SWEL 2 Walkdowns

A total of 2 component Seismic Walkdowns were performed. In addition, a total of 2 Area Walk-bys were completed. All areas of the plant that contain items on the SWEL were included in the Area Walk-bys.

## 7.1 INACCESSIBLE ITEMS

Table 7-1 identifies the components originally determined to be inaccessible for walkdowns. These items are located throughout the plant and the required Seismic Walkdowns and Area Walk-bys were not completed for these items during the initial phase of walkdowns.

Plant Hatch Unit 2 2013 Refueling Outage (2R22) is scheduled to begin on February 11, 2013. Due to the proximity of the start date of 2R22 to the NTTF 2.3: Seismic walkdowns, those Unit 2 SWEL items that were deemed inaccessible during the 180-day response period, and that require special planning for a Unit outage to complete inspection, will be walked down in the 2015 Refueling Outage (2R23). The outage scope and schedule, and all associated tag-outs, for 2R22 had been set prior to beginning the NTTF 2.3 Seismic Walkdowns, and there are currently no electrical tag-outs in 2R22 that will accommodate walkdowns of the Unit 2 inaccessible SWEL items. Plant Hatch has chosen to defer the Unit 2 inaccessible SWEL items that require special outage planning for inspection to 2R23. Other inaccessible items will be walked down during 2R22.

**Table 7-1. Inaccessible Equipment per Original Walkdown Scope**

| # | Item No. | Description | Access | Remaining Walkdown Scope | Schedule for Completion |
|---|---|---|---|---|---|
| 1. | 2R23-S003 | 600V STATION SERVICE SWGR 2C & XFMR | See Note 2 | SWC and AWC | Outage 2R23 |
| 2. | 2R23-S004 | 600V STATION SERVICE SWGR 2D & XFMR | See Note 2 | SWC and AWC | Outage 2R23 |

**Table 7-1. Inaccessible Equipment per Original Walkdown Scope**

| # | Item No. | Description | Access | Remaining Walkdown Scope | Schedule for Completion |
|---|---|---|---|---|---|
| 3. | 2R22-S016 | 250V DC BATTERY SWGR 2A | See Note 2 | SWC and AWC | Outage 2R23 |
| 4. | 2R22-S005 | 4160V SWGR EMERGENCY BUS 2E | See Note 2 | SWC and AWC | Outage 2R23 |
| 5. | 2R22-S007 | 4160V SWGR EMERGENCY BUS 2G | See Note 2 | SWC and AWC | Outage 2R23 |
| 6. | 2P64-F039 | RBCHW COIL INLET ISO AOV | See Note 1 | SWC and AWC | Outage 2R22 |
| 7. | 2P64-F029 | RBCHW COIL INLET ISO AOV | See Note 1 | SWC and AWC | Outage 2R22 |
| 8. | 2E11-F060A | LOOP A ISO GATE VALVE | See Note 1 | SWC and AWC | Outage 2R22 |
| 9. | 2E11-F009 | SHUTDOWN COOL INBRD ISO | See Note 1 | SWC and AWC | Outage 2R22 |
| 10. | 2T47-B007A | DW Cooling System Unit | See Note 1 | SWC and AWC | Outage 2R22 |
| 11. | 2T47-B009A | DW Cooling System Unit | See Note 1 | SWC and AWC | Outage 2R22 |
| 12. | 2T47-B008B | DW Cooling System Unit | See Note 1 | SWC and AWC | Outage 2R22 |

**Table 7-1. Inaccessible Equipment per Original Walkdown Scope**

| # | Item No. | Description | Access | Remaining Walkdown Scope | Schedule for Completion |
|---|---|---|---|---|---|
| 13. | 2P33-B001A | H2/02 ANALYZER SAMPLE CHILLER | See Note 2 | SWC and AWC | Outage 2R22 |
| 14. | 2C71-P001 | RPS POWER DISTRIBUTION PANEL | See Note 2 | SWC and AWC | Outage 2R22 |
| 15. | 2R25-S001 | 125V DC DIV 2 CAB 2A | See Note 2 | SWC and AWC | Outage 2R22 |
| 16. | 2R25-S002 | 125V DC DIV 2 CAB 2B | See Note 2 | SWC and AWC | Outage 2R22 |
| 17. | 2R25-S004 | 125V DC CAB 2D | See Note 2 | SWC and AWC | Outage 2R22 |
| 18. | 2R25-S005 | 125V DC CAB 2E | See Note 2 | SWC and AWC | Outage 2R22 |
| 19. | 2R25-S036 | 120/208V AC ESS CAB 2A | See Note 2 | SWC and AWC | Outage 2R22 |
| 20. | 2R25-S064 | 120/208V AC VITAL CAB 2A INSTR BUS | See Note 2 | SWC and AWC | Outage 2R22 |
| 21. | 2R25-S037 | 120/208V AC ESS CAB 2B | See Note 2 | SWC and AWC | Outage 2R22 |
| 22. | 2R24-S021 | 2A RX BLDG 250V DC MCC | See Note 2 | SWC and AWC | Outage 2R22 |
| 23. | 2R24-S018B | 600VAC MCC 2E-B | See Note 2 | SWC and AWC | Outage 2R22 |

Table 7-2 provides a list of components determined to be inaccessible to open doors to perform inspections for other adverse conditions. The anchorage for these components was visible without opening all panels of the cabinet and was therefore inspected during the initial walkdowns.

**Table 7-2. Inaccessible Equipment Resulting from Guidance on Opening Cabinets to Inspect for Other Adverse Conditions**

| # | Item No. | Description | Access | Remaining Walkdown Scope | Schedule for Completion |
|---|---|---|---|---|---|
| 1. | 2R24-S011 | 600V MCC 2C ESS DIV 1 | See Note 2 | Internal of panel | Outage 2R22 |
| 2. | 2R24-S022 | 125/250V DC MCC 2B ESS DIV 2 | See Note 2 | Internal of panel | Outage 2R22 |
| 3. | 2P33-B001B | H2/02 ANALYZER SAMPLE CHILLER | See Note 2 | Internal of panel | Outage 2R22 |

Notes (Table 7-1 and Table 7-2):

1) The component was located inside an area of the plant not accessible during normal plant operation. Walkdowns of these components and of the associated plant areas were deferred to an outage.

2) Inspection of the cabinet's internals could not be performed without opening the doors of the equipment. Opening doors on these types of components was not permitted by plant operations at the time of the Seismic Walkdowns due to equipment deemed too sensitive to permit access, or requiring special, planned precautions, to open the doors.

3) While the Seismic Walkdowns were in progress at Hatch Unit 2, supplemental guidance/clarification for opening cabinets to inspect for adverse conditions was received on September 18, 2012. This required the opening of cabinets, electrical boxes and switchgear and the inspection of internals for SWC attributes, even when opening the components was not

required to inspect the anchorage. However, the affected components were identified and scheduled for re-inspection with component doors opened.

4) Hatch Unit 2 has 6 transformers (Equipment Class 4) in the SWEL-1. With the exception of components (MPL #) 2R23-S003 and 2R23-S004, which were deferred as stated above, the transformers were inspected to the extent practical. All visible anchors, hardware and surfaces were inspected. The anchorage for the transformers was visible without opening the component. To inspect the transformer further would require disassembly and therefore would not be considered part of a normal electrical inspection. The inspection of the transformers meets the requirements of the guidance document and the 50.54(f) letter. Listed below are the 4 transformers for which inspections were completed:

| | | |
|---|---|---|
| MPL # | 2R11-S004 | 45KVA 600-120/208V PWR XFMR |
| MPL # | 2R11-S041 | 600-120/208 V ESSENTIAL XFMR |
| MPL # | 2S11-S009 | 4160/600V225KVA XFMR |
| MPL # | 2S11-S012 | 4160/600V 75KVA XFMR |

Note that some of these MPL numbers include both the switchgear and the transformer.

## 8.0 RESULTS

This section discusses the results of the Seismic Walkdowns that were performed in response to the NRC 50.54(f) letter dated March 12, 2012, "Enclosure 3, Recommendation 2.3: Seismic". As potentially adverse conditions were identified conditions reports were initiated in the Plant CAP program and evaluated. The sections below discuss the results of these walkdowns and evaluations.

### 8.1 POTENTIALLY ADVERSE SEISMIC CONDITIONS

All potentially adverse conditions were conservatively entered into the site Corrective Action Program (CAP) per Southern Nuclear expectations in a timely fashion. While some preliminary licensing basis evaluations were performed by the SWEs as part of the generation of the CAP entries, the items did not first undergo a detailed seismic licensing basis review as described in EPRI Report 1025286 (Reference 10.2). Consequently, the as-found conditions in Table 8-1 below do not necessarily indicate that SSCs are deficient or not in conformance with their seismic licensing basis. Instead, it is an indication that Southern Nuclear has a very low threshold for CRs and actively uses the system.

SNC personnel familiar with the Plant Hatch Seismic Licensing basis, Plant Hatch seismic qualification methods and documentation, and Southern Nuclear requirements and procedures for entering items into the CAP reviewed and dispositioned all of the potentially adverse seismic conditions as part of the CAP process. The subsections below summarize the key findings from the CAP reviews that pertain to equipment operability, SSC conformance with the seismic licensing basis, and any required plant changes.

During the course of the seismic walkdowns, a total of 49 Unit 2 Potentially Adverse Conditions were identified and entered into the Corrective Action Program. In addition, another 5 were entered that are Common to both Units 1 and 2. Table 8-1 provides additional details on the SSCs that were identified during the walkdowns and entered into the CAP as degraded, nonconforming, or unanalyzed relative to their seismic licensing basis.

**Table 8-1. Potentially Adverse Conditions**

| Component / Area | Brief Description of Potentially Adverse Seismic Condition | CR # | Brief Discussion of Analysis/Conclusion | Action Taken or Planned to Address/ Resolve the Condition | Status (open/ closed) |
|---|---|---|---|---|---|
| Unit 2 Reactor Building el 203' | Seismic Walkdown Engineers observed two overhead lights with open clasp hooks. The lights in question are in the Unit 2 Reactor Bldg, elevation 203', by the SBLC Boron Solution Tank Area (2C41-A001). Lights are in proximity to safety related equipment and have the potential to fall out of the hooks during a seismic event. | 513069 | Seismic Walkdown Engineers determined that the lights would remain supported by the electrical cable if lights dislodged from the clasp. Consequently, this condition does not pose any adverse condition that would affect the function of the equipment. | Repair or replace clasp hooks. | Closed |
| Unit 2 Reactor Building el 130' | Seismic Walkdown Engineers observed what appears to be a hammer lying loose on top of conduit near the ceiling above the aisle way between MCC panel 2R24-S022 and the CRDs in the Unit 2 Reactor Building elevation 130'. This tool needs to be removed. | 515100 | Hammer should be removed. | Build scaffold to remove hammer. | Open Due 3/16/2013 |
| 2R43-C005C | Seismic Walkdown Engineers observed the Southeast anchor of the DG 2C Air Compressor (2R43-C005C) is missing the required grout as contained on the other three anchor bolts. | 515115 | Seismic Walkdown Engineers judge the as-found anchorage adequate to support the compressor in a seismic event. Grout is provided under the other three anchor bolts. Any potential bending of this bolt in a seismic event is minimized by all four anchor bolts clamping the compressor support frame securely to the concrete pad. Adding grout will also further protect the anchor bolt from corrosion. | Install the grout per site procedures. | Open Due 11/27/2013 |

**Table 8-1. Potentially Adverse Conditions**

| Component / Area | Brief Description of Potentially Adverse Seismic Condition | CR # | Brief Discussion of Analysis/Conclusion | Action Taken or Planned to Address/ Resolve the Condition | Status (open/ closed) |
|---|---|---|---|---|---|
| 2R43-C005C | The Seismic Walkdown Engineers (SWEs) identified a condition on the DG 2C Air Compressor (2R43-C005C) located in the Diesel Building, Elevation 130'.<br>A flexible conduit that spans to 2R43-C005C lies against the hard edge of a tube track. | 515118 | The flexible conduit presently has no adverse conditions, but may experience fretting in the long term as the compressor operates and introduces vibratory loads on the flexible conduit. | Install padding to soften the hard edge. | Open<br>Due<br>11/27/2013 |
| 2R43-C006C | The Seismic Walkdown Engineers (SWEs) identified two conditions on the DG 2C Air Compressor (2R43-C006C) located in the Diesel Building, Elevation 130'.<br><br>The first condition is a flexible conduit that spans from 2E23-247 to 2R43-C006C and lies against the hard edge of a tube track.<br><br>The second condition is a missing screw on the fan belt cover plate on compressor. | 515119 | The first condition - The flexible conduit presently has no adverse conditions, but may experience fretting in the long term as the compressor operates and introduces vibratory loads on the flexible conduit. It is recommended that a padding be installed to soften the hard edge.<br><br>The second condition - The screw is not a required for structural adequacy of the cover. | Install padding to soften the hard edge.<br><br>Install missing screw. | Open<br>Due<br>11/27/2013 |

**Table 8-1. Potentially Adverse Conditions**

| Component / Area | Brief Description of Potentially Adverse Seismic Condition | CR # | Brief Discussion of Analysis/Conclusion | Action Taken or Planned to Address/ Resolve the Condition | Status (open/ closed) |
|---|---|---|---|---|---|
| Unit 2 HPCI Room | Seismic Walkdown Engineers in Unit 2 HPCI Room noticed a knee-brace for conduit support near Valve 2E41-F007 near the 2T41-B005B HPCI cooler in the Unit 2 HPCI Room has only one anchor bolt. There is a hole in the base plate and the wall for the second bolt, but it appears that only one bolt was ever installed. The knee-brace is one of a pair of supports for a small conduit near the wall. The second knee brace is fairly large and has all anchor bolts, so it is judged to have sufficient capacity to support the small conduit during a seismic event. However, it is against good engineering practice to have a support with only one bolt. | 515489 | The knee-brace is one of a pair of supports for a small conduit near the wall. The second knee brace is fairly large and has all anchor bolts, so it is judged to have sufficient capacity to support the small conduit during a seismic event. However, it is against good engineering practice to have a support with only one bolt. | Install missing anchor bolt. | Open Due 11/27/2013 |
| 2R25-S006 | The Seismic Walkdown Engineers (SWEs) identified a screw missing from the top left corner of the front panel of distribution panel 2R25-S006. | 515500 | Seismic Walkdown Engineers judged the panel will perform its design function during a seismic event in the as-found condition with the one screw missing based on an evaluation of a similar panel with only one screw present at each of the four corners (reference DOEJ-HX-35281-C001, "Evaluate Capacity of 4 Screws to Hold Door in Place". | Replace the missing screw. | Open Due 11/27/2013 |

**Table 8-1. Potentially Adverse Conditions**

| Component / Area | Brief Description of Potentially Adverse Seismic Condition | CR # | Brief Discussion of Analysis/Conclusion | Action Taken or Planned to Address/ Resolve the Condition | Status (open/ closed) |
|---|---|---|---|---|---|
| 2R25-S031 | The Seismic Walkdown Engineers (SWEs) identified a screw missing at the bottom of the front panel of distribution panel 2R25-S031. | 515506 | Seismic Walkdown Engineers judged the panel will perform its design function during a seismic event in the as-found condition with the one screw missing based on an evaluation of a similar panel with only one screw present at each of the four corners (reference DOEJ-HX-35281-C001, "Evaluate Capacity of 4 Screws to Hold Door in Place". | Replace the missing screw. | Open Due 11/27/2013 |
| 2T41-D007/8 | Seismic Walkdown Engineers in Unit 2 Reactor Building elevation 203' noticed more than mild surface corrosion on the bolts that anchor down the Standby Gas Treatment Filter Train (SBGT) 2T41-D007/8. The extent of corrosion on some bolts appears sufficient to slightly reduce the structural capacity of these bolts. | 515661 | While it appears that the capacity of some of the bolts may be slightly reduced, the overall seismic adequacy of the installation is judged not to be adversely impacted at this time. This judgment is based on the fact that the equipment is anchored with at least 20 anchors and only a small number (approximately 3 or 4) appear to have more than mild corrosion. However, the corrosion appears to be getting progressively worse based on observations of other anchors and components in the area. Therefore, the corrosion on the bolts needs to be investigated and corrected to ensure that the seismic adequacy of the SBGT is maintained. | Clean and coat anchor bolts, or replace. | Open Due 11/27/2013 |

**Table 8-1. Potentially Adverse Conditions**

| Component / Area | Brief Description of Potentially Adverse Seismic Condition | CR # | Brief Discussion of Analysis/Conclusion | Action Taken or Planned to Address/ Resolve the Condition | Status (open/ closed) |
|---|---|---|---|---|---|
| Unit 2 Reactor Building el 185' | Corroded plates and welds were found adjacent to SBGT Filter Train, 2T46-D001B in the Unit 2 Reactor Building at elevation 185'. Galvanized Unistrut members seem to be not corroded. However the welded connection and the small baseplate is corroded. This Unistrut framing system is needed to support the conduits from the panel of the filter train. | 515700 | Currently, it has been judged to perform its function, however, corrosion appears to be getting progressively worse. | Corroded members and connections should be replaced. | Open Due 11/27/2013 |
| 2R24-S027 | Seismic Walkdown Engineers observed a broken, or loose, piece of raceway 2E23448 exiting MCC MPL number 2R24-S027 and entering cable tray 2LBC801. Any sharp edge on this piece of raceway could potentially damage the cable jacket within raceway. | 515721 | Loose piece should be properly installed and tightened. | Properly install and tighten loose piece. | Open Due 4/30/2013 |
| 2H21-P021 | Seismic Walkdown Engineers noticed there is one anchor missing on the south side of the support for Instrument Rack 2H21-P021 on the 87' elevation of the Unit 2 SE Diagonal in the Reactor Building. A good deal of debris in the hole, so it is unsure whether the anchor is broken off, was removed, or was never installed. | 515727 | There are seven other anchors in good condition, and the rack frame is very stiff. It is judged that the remaining anchors have sufficient strength to restrain the rack during a seismic event. | Replace the missing anchor bolt. | Open Due 11/27/2013 |

**Table 8-1. Potentially Adverse Conditions**

| Component / Area | Brief Description of Potentially Adverse Seismic Condition | CR # | Brief Discussion of Analysis/Conclusion | Action Taken or Planned to Address/ Resolve the Condition | Status (open/ closed) |
|---|---|---|---|---|---|
| Unit 2 SE Diagonal 87' | Seismic Walkdown Engineers noticed on the 87' elevation of the Unit 2 SE Diagonal in the Reactor Building, there is a Unistrut pipe clamp on the west wall missing a bolt. The pipe clamp is spread open, offering no restraint to the supported pipe. | 515734 | There are intact pipe clamps above and below the open clamp, so the unrestrained span of the conduit is small. The existing pipe clamps offer enough support to prevent significant movement during a seismic event. | Replace the missing bolt. | Open Due 11/27/2013 |
| 2T46-D001B | Seismic Walkdown Engineers found an anchor bolt missing from the support of the SBGT Filter Train (2T46-D001B) in Room 2R303, elevation 185', of the Unit 2 Reactor Building. | 515744 | The train currently has 17 anchors (9 on one side and 8 on the other side). The Seismic Walkdown Engineers judged the support to be adequate during a seismic event due to the number of existing bolts remaining on each side of the train. | The missing anchor bolt should be replaced. | Open Due 11/27/2013 |
| Unit 2 Reactor Building el 158' | Seismic Walkdown Engineers noticed on the 158' elevation of the Unit 2 Reactor Building, there are two brass nozzles sitting loose on top of the Gas Cylinder Location 2P33-P066 and two brass nozzles sitting on the frame for panel 2H21-P405B, which is a high trip hazard. | 515750 | The nozzles are small and relatively light, so they are unlikely to cause any structural damage during a seismic event. However, due to their location on the support for a high trip hazard panel, there is a concern that the nozzles could cause a trip event. | The nozzles were removed. | Closed |
| Unit 2 Reactor Building SBGT Area | A crack was found on the concrete floor on elevation 203' of Unit 2 Reactor Building where the SBGT filter train is located. This crack goes through one of the base plates supporting the exhaust fan (2T41-C005B). It appears that the crack goes through one of the post-installed anchor bolts. Due to this crack, the capacity of the anchor is reduced. | 515779 | The Seismic Walkdown Engineers judged the support to be adequate for the ductwork during a seismic event due to the number of existing nearby supports and relatively light loading on the base plates. | Repair crack. | Open Due 11/27/2013 |

**Table 8-1. Potentially Adverse Conditions**

| Component / Area | Brief Description of Potentially Adverse Seismic Condition | CR # | Brief Discussion of Analysis/Conclusion | Action Taken or Planned to Address/ Resolve the Condition | Status (open/ closed) |
|---|---|---|---|---|---|
| Intake Structure el 110' | Seismic Walkdown Engineers found that numerous piping, instrumentation, and conduit/equipment supports in the Intake Structure elevation 110' has general coatings degradation and minor surface rusting. Note that this potentially adverse seismic condition is common to both units. | 516327 | Perform prompt resurfacing and coating as needed to interrupt degradation. | Prompt resurfacing and coating is needed to interrupt degradation per work order SNC433192 | Open Due 11/27/2013 |
| 2E11-F252A | Seismic Walkdown Engineers (SWEs) observed that there is one anchor bolt missing from a two-bolt support for the tubing near valve 2E11-F252A in the NE diagonal on the 97' elevation of the Unit 2 Reactor Building. | 516572 | The Seismic Walkdown Engineers judged the support to be adequate during a seismic event and is therefore judged to not be a potentially adverse seismic condition. | A new anchor bolt should be installed. | Open Due 11/27/2013 |
| Unit 2 Reactor Building NE Diagonal 108' | Seismic Walkdown Engineers (SWEs) observed there is a small section of grating broken near the corner of the 2T41-B003B RHR/CS Pump Room Cooler in the NE diagonal on the 108' elevation of the Unit 2 Reactor Building. | 516577 | The section of grating is extremely small and is welded to the kick plate around the pipe going through the grating at that location. The grating is not in immediate danger of separating and becoming an impact hazard and does not affect the larger grating panel's ability to support load. The Seismic Walkdown Engineers judged the grating to be seismically adequate. | Repair or replace grating. | Open Due 11/27/2013 |

**Table 8-1. Potentially Adverse Conditions**

| Component / Area | Brief Description of Potentially Adverse Seismic Condition | CR # | Brief Discussion of Analysis/Conclusion | Action Taken or Planned to Address/ Resolve the Condition | Status (open/ closed) |
|---|---|---|---|---|---|
| 2E11-B001A | Seismic Walkdown Engineers found 2E11-B001A RHR Heat Exchanger A in the NE diagonal on the 97' elevation of the Unit 2 Reactor Building has eight anchors to the steel frame. Two of the bolts have full thread engagement but do not have the required minimum of two threads above the nut; an additional two bolts have bolts approximately 1/4" below the nuts and so do not have full thread engagement. | 516593 | The bolts are welded to the steel frame, providing additional support for the connection. In addition, the heat exchanger is also supported by four sway struts below the roof above to prevent overturning of the equipment. The shear strength is not impacted, overturning is restrained, and the center of gravity of the equipment is below the bolts and the vertical seismic acceleration at that level will not exceed 1.0, so the largest tension load the bolts will see is the preload, which is already applied. Therefore, the bolts are judged to be acceptable and do not create a potentially adverse seismic condition. | CR for documentation purposes only. | Closed |
| 2E11-B001B | Seismic Walkdown Engineers found 2E11-B001B RHR Heat Exchanger B in the SE diagonal on the 97' elevation of the Unit 2 Reactor Building has eight anchors to the steel frame. Two of the bolts have full thread engagement but do not have the required minimum of two threads above the nut. | 516595 | The bolts are welded to the steel frame, providing additional support for the connection. In addition, the heat exchanger is also supported by four sway struts below the roof above to prevent overturning of the equipment. The shear strength is not impacted, overturning is restrained, and the center of gravity of the equipment is below the bolts and the vertical seismic acceleration at that level will not exceed 1.0, so the largest tension load the bolts will see is the preload, which is already applied. Therefore, the bolts are judged to be acceptable and do not create a potentially adverse seismic condition. | CR for documentation purposes only. | Closed |

**Table 8-1. Potentially Adverse Conditions**

| Component / Area | Brief Description of Potentially Adverse Seismic Condition | CR # | Brief Discussion of Analysis/Conclusion | Action Taken or Planned to Address/ Resolve the Condition | Status (open/ closed) |
|---|---|---|---|---|---|
| 2H21-P305 | Seismic Walkdown Engineers observed 5 missing slip connectors out of 12 for the door to timer panel 2H21-P305 located in the Diesel Generator Building Switchgear Room 2G. | 516713 | Seismic Walkdown Engineers judged the panel will perform its design function during a seismic event in the as-found condition with the 7 remaining connectors installed based on conclusions outlined in DOEJ-HX-35281-C001, "Evaluate Capacity of 4 Screws to Hold Door in Place". | Replace the 5 missing connectors. | Open Due 11/27/2013 |
| 2R24-S022 | Seismic Walkdown Engineers observed a bolt inside MCC 2R24-S022 that is misaligned and not in full contact with the surface. Due to the misalignment, it cannot be determined whether the bolt is properly installed and whether it is fully engaged and fully tightened. It was observed in the field and documented in the attached picture that, most likely, the bolt is misaligned due to the fact that there is an interfering object in back of the cabinet. The bolt is to be checked to assure that it is properly tighten and that it is fully engaged as noted in the design documents. If not, adequate measures are to be taken to meet the design documents and have the bolt properly tightened and in full contact with the surface. | 516767 | This MCC is composed of 10 frames which are bolted down in each corner, so 4 bolts for each frame in addition to the frames being bolted to each other. This bolt misalignment occurs on one of the bolts of Frame 7 which is an internal frame. As such, by engineering judgment it is determined that having one bolt out of the total 40 not properly tightened, the MCC would still be adequate to maintain its integrity during a seismic event. | Replace missing bolt. | Open Due 11/27/2013 |

**Table 8-1. Potentially Adverse Conditions**

| Component / Area | Brief Description of Potentially Adverse Seismic Condition | CR # | Brief Discussion of Analysis/Conclusion | Action Taken or Planned to Address/ Resolve the Condition | Status (open/ closed) |
|---|---|---|---|---|---|
| 2R43-P001C | The Seismic Walkdown Engineers (SWEs) identified two screws missing on the back panel of 2R43-P001C. The screws function to fasten the panel cover to the cabinet. | 518617 | Per the SWEs judgment this condition is not considered to be a seismic concern based on the proper installation of the remaining screws. The stiffness of the cabinet is not significantly degraded and the remaining screws are sufficient to fasten the panel to the cabinet. | Replace missing screws. | Open Due 11/27/2013 |
| Unit 2 Reactor Building el 87' Bay 10 of Torus Room | Seismic Walkdown Engineers noticed in Bay 10 of the Torus Room on the 87' elevation of the Unit 2 Reactor Building, there is a ladder left leaning against the wall adjacent to ESS Air ACC 2P52-A001. The ladder is not secured at the top of the bottom, so it is free to move during a seismic event. | 518746 | The ACC is the only sensitive equipment in the area, and it is protected by a large conduit between the component and the ladder. The valve is chained into position, so incidental contact will not cause the valve to change position. Therefore, it is judged that there is no potentially adverse seismic condition and will not affect operability. | Restrain ladder properly. | Closed |
| Unit 2 Reactor Building el 87' Bay 10 of Torus Room | Seismic Walkdown Engineers noticed in Bay 10 of the Torus Room on the 87' elevation of the Unit 2 Reactor Building, there is a four-bolt vertical support for a small conduit running to 2E51-F003 that is missing one anchor bolt. | 518751 | There is a second vertical support a few feet away that is fully intact, and the conduit is also supported at the wall with a fully intact support. The conduit is very light, and it is judged that the remaining anchors have sufficient capacity to restrain the conduit during a seismic event. Therefore, it is judged that there is no potentially adverse seismic condition and will not affect operability. | Install missing anchor bolt. | Open Due 11/27/2013 |
| Unit 2 Control Building el 130' | Seismic Walkdown Engineers noticed there is a HVAC duct directly over the 2R42-S031 battery charger on the 130' elevation of the Unit 2 Control Building. The lower left hand bolt has a loose nut on what appears to be a seismic restraint for the HVAC at the wall. | 519481 | The remaining three bolts are judged to have sufficient capacity due to the strength of the bolts to restrain the HVAC at the wall under a seismic event, however good engineering practice requires that the nut be tightened fully. | Tighten nut. | Open Due 11/27/2013 |

**Table 8-1. Potentially Adverse Conditions**

| Component / Area | Brief Description of Potentially Adverse Seismic Condition | CR # | Brief Discussion of Analysis/Conclusion | Action Taken or Planned to Address/ Resolve the Condition | Status (open/ closed) |
|---|---|---|---|---|---|
| 2R11-S041 | Seismic Walkdown Engineers noticed there are 8 screws missing out of 40 (six on the top and two on the bottom) on the front panel cover of 2R11-S041 that is adjacent to Penetration 2Z43-H1002D in Room 2L48-C34 on the 130' elevation of the Unit 2 Control Building. | 519565 | The remaining screws are judged sufficient to restrain the relatively light panel cover in the case of a seismic event. Therefore, there is no potentially adverse seismic condition and operability is not impacted. | Install missing screws. | Open Due 11/27/2013 |
| 2R43-S017B | Seismic Walkdown Engineers noticed the junction box attached to battery rack 2R42-S017B is missing one screw out of four in the top right corner of the cover plate. | 519568 | There are three existing screws and two holes in the cover plate that are not meant to have screws. The existing screws are judged to be sufficient to hold the cover plate in the case of a seismic event. Therefore, it is judged that there is no potentially adverse seismic condition and will have no impact on operability. | Replace missing screw. | Open Due 11/27/2013 |
| Unit 2 Control Building el 112' | Seismic Walkdown Engineers noticed a loose nut on a conduit support for Conduit 2E21611 in the 2R42-S001B battery room on the 112' elevation of the Unit 2 Control Building. | 519680 | The support is lightly loaded and will be in compression due to the configuration of the support. Therefore, it is judged that the other three anchors have sufficient strength to restrain the support during a seismic event, so there is no potentially adverse seismic condition and will have no impact on operability. | Tighten nut. | Open Due 11/27/2013 |

**Table 8-1. Potentially Adverse Conditions**

| Component / Area | Brief Description of Potentially Adverse Seismic Condition | CR # | Brief Discussion of Analysis/Conclusion | Action Taken or Planned to Address/ Resolve the Condition | Status (open/ closed) |
|---|---|---|---|---|---|
| Unit 2 Reactor Building el 130' | Seismic Walkdown Engineers observed a cantilever frame supporting a 12" diameter sheet-metal duct located in Unit 2 Reactor Building elevation 130'on the West wall of room 2R103 in the vicinity of the airlock. This frame is supposed to have six anchor bolts supporting it to the structure. Of the six bolts, the upper most bolt on the north leg of the support is missing. | 519729 | The frame acts as lateral support for a sheet metal duct, which by nature does not impose significant loads on the structure. Based on engineering judgment, no potentially adverse seismic condition and will have no impact on operability. | Replace missing bolt. | Open Due 11/27/2013 |
| 2H21-P008 | Seismic Walkdown Engineers observed MPL 2H21-P008 located in the Unit 2 Reactor Bldg elevation 130' Room 2R103. The supporting structure has two legs that are supposed to have three bolts on the base of each leg. Both legs are supposed to have two bolts on the edge and one in the middle. One leg was observed to have a middle bolt missing. Also, the pliers should be removed from support area as well. | 519996 | The legs are very thin plates (1/8") with no significant stiffness. By engineering judgment, it is considered that the absence of the third bolt on the one leg will not adversely affect the stability of the panel structure. There are no safety related components in the vicinity of this panel. Therefore, there is no potentially adverse seismic condition and operability is not impacted. | Replace missing bolt. | Open Due 11/27/2013 |

**Table 8-1. Potentially Adverse Conditions**

| Component / Area | Brief Description of Potentially Adverse Seismic Condition | CR # | Brief Discussion of Analysis/Conclusion | Action Taken or Planned to Address/ Resolve the Condition | Status (open/ closed) |
|---|---|---|---|---|---|
| Unit 2 Reactor Building el 130' | Seismic Walkdown Engineers observed in Room 2R103 of the Unit 2 Reactor Building Elevation 130' that a miscellaneous support column has washers that are not in contact with two of the nuts for the base plate. There is a gap of approximately 1/8" between the nuts and their corresponding washers. | 519997 | The column supports miscellaneous conduits of various sizes and it spans from the floor up to the ceiling. The column is a made up of tube steel with stiffeners at the base. During a seismic event the column would deflect 1/8" perpendicular to the main axis prior to stressing the member. Considering the member is long slender column and the fact that the conduits being supported do not contribute significant loads, it is determined by engineering judgment that the temporary effects of this gap will not adversely affect the stability of the support. Therefore, there is no potentially adverse seismic condition and operability is not impacted. | The nuts are to be removed, cleaned and replaced to be in full contact as was intended in their designed condition. | Open Due 11/27/2013 |
| 2R42-S052 | Seismic Walkdown Engineers (SWEs) observed that the top Globe Strut channel supporting the 2R42-S052 24V Battery Charger 2B is bent out from the wall at the far end of the member. The charger is supported by two Globe Strut channels near the top and bottom of the charger. The bolt attaching the charger to the bent portion of the Globe Strut channel appears to be over-tightened to the point that the Globe Strut channel is sprung and the lower edge of the spring nut does not make proper contact with the inner edge of the channel. This condition reduces the capacity of the connection compared to a properly installed spring nut connection. | 520297 | The other three fasteners supporting the charger are properly fastened. A vertical conduit fastened to the bottom of the panel provides additional support to the battery charger in the vertical direction. Therefore, the SWE's judge that the attachment of the battery charger to the wall will perform its design function during a seismic event based on the properly installed connections. | The bent unistrut-type member should be replaced. | Open Due 11/27/2013 |

**Table 8-1. Potentially Adverse Conditions**

| Component / Area | Brief Description of Potentially Adverse Seismic Condition | CR # | Brief Discussion of Analysis/Conclusion | Action Taken or Planned to Address/ Resolve the Condition | Status (open/ closed) |
|---|---|---|---|---|---|
| Unit 2 Reactor Building NE Diagonal el 87' | Seismic Walkdown Engineers (SWEs) identified a 6' metal scaffold ladder left unrestrained behind the 2H21-P018 RHR Instrument Rack and a support structure in the Unit 2 Reactor Building Northeast Diagonal at elevation 87'. The ladder was laid horizontally and leaned against the east Reactor Building wall behind the diagonal support steel for the rack and a steel column. | 522935 | During a seismic event, the ladder would not be able to impact anything except the support steel. The impact is judged by the SWEs to be credible but not significant. Therefore, there is no potentially adverse seismic condition and design function of any nearby component is not affected. | Properly restrain ladder. | Closed |
| Unit 2 Reactor Building NE Diagonal el 87' | The Seismic Walkdown Engineers (SWEs) identified an approximately 1" diameter demineralized water line in the NE Diagonal on the 87' elevation of the Unit 2 Reactor Building that appears to be missing a U-bolt connection to a support. There is an angle supported from the platform steel above with two holes drilled in it immediately adjacent to the pipe located above the 2P21-F006 valve and the 2H21-P001 instrument rack. This support looks like it was intended to be connected to this pipe. There is approximately 14 linear feet of piping between the adjacent supports because of the apparently missing support point. | 523085 | The longer contributory span adds less than 10 pounds of weight to each of the adjacent supports. The adjacent supports are judged by the SWEs to adequately carry the additional contributory weight and seismic loads of the small diameter water piping because of the short support member spans and stiffness. Therefore, there is no potentially adverse seismic condition that would cause the demineralized water piping to affect nearby components. | Missing U-bolt should be reinstalled. | Open Due 11/27/2013 |

**Table 8-1. Potentially Adverse Conditions**

| Component / Area | Brief Description of Potentially Adverse Seismic Condition | CR # | Brief Discussion of Analysis/Conclusion | Action Taken or Planned to Address/ Resolve the Condition | Status (open/ closed) |
|---|---|---|---|---|---|
| 2H21-P414A/B | Seismic Walkdown Engineers noticed one hole metal clamps were not properly holding down flex conduit on the back of Instrument Racks 2H21-P414A/B located in Unit 2 HPCI Room elevation 87'. | 523140 | The flex conduits are clamped down appropriately in other locations on the back of the Instrument Racks. Therefore, there is no potentially adverse seismic condition and operability is not impacted. | The one hole metal clamps should be appropriately positioned on the flex conduit. | Open Due 11/27/2013 |
| 2X41-C010A<br><br>1X41-C006E | Seismic Walkdown Engineers observed that the bolts missing on the covers of the following equipment located on the DGB Roof: There is a bolt missing in the cover panel of MPL # 2X41-C010A. There is a bolt missing in the cover panel of MPL # 1X41-C006E. Note that this potentially adverse condition is common to both units. | 523328 | These two bolts are to be installed in the respective equipment.<br>The cover panels are supported with multiple bolts, it is judged that the absence of one bolt on each panel will not adversely affect the functionality or the seismic capability of the dampers. | These two bolts are to be installed in the respective equipment. | Open Due 11/27/2013 |
| Carbon Dioxide piping on Diesel Building Roof | Seismic Walkdown Engineers (SWEs) observed loose nuts on two U-bolts securing the carbon dioxide piping to supports on the Diesel Generator Building roof. Note that this potentially adverse condition is common to both units. | 523486 | The nuts on the U-bolts need to be properly fastened to secure the loose U-bolts to the pipe and supports. | The nuts on the U-bolts need to be properly fastened to secure the loose U-bolts to the pipe and supports. | Open Due 11/27/2013 |
| 2T41-B004B | Seismic Walkdown Engineers noticed 2T41-B004B RCIC Pump Room Cooler Unit is missing a bolt. The cooler is located in the NW Diagonal of the Unit 2 Reactor Building elevation 104'. | 523718 | The cooler is support by additional bolts throughout; there are bolts on both side of the missing bolt. The additional bolts are about 6 inches from the hole in both directions. Therefore, missing a single bolt will not adversely affect the functionality or the seismic capability of the housing. | Install missing bolt. | Open Due 11/27/2013 |

**Table 8-1. Potentially Adverse Conditions**

| Component / Area | Brief Description of Potentially Adverse Seismic Condition | CR # | Brief Discussion of Analysis/Conclusion | Action Taken or Planned to Address/ Resolve the Condition | Status (open/ closed) |
|---|---|---|---|---|---|
| Unit 2 Reactor Building el 158' | Seismic Walkdown Engineers noticed top bolt of one of the supports for the ladder in the area has a loose nut. The location of this support is Unit 2 Reactor Building elevation 158' against the East wall (RL column). | 523720 | This was judged not to be a seismic concern since the ladder is far from other equipment in the area. | Tighten nut. | Open Due 11/27/2013 |
| Unit 2 Control Building el 112' | Seismic Walkdown Engineers observed two pull boxes near Penetration 2Z43-H1064C with missing screws on the cover plates. The pull boxes are located on the 112' elevation of the Unit 2 Control Building in the Station Battery 2A Room. There are three out of six cover plate screws missing on one box and one out of six cover plate screws missing on the second box. | 524309 | Due to the light weight of the cover plate, the remaining screws are judged sufficient by the SWEs to keep the cover plates secure and not interact with any other SSCs during a seismic event. | Install missing screws. | Open Due 11/27/2013 |
| Unit 2 Control Building el 112' Room C027 | Seismic Walkdown Engineers observed on the 112' elevation of the Unit 2 Control Building in Room C027 that there is a screw missing securing a support strap to one side of the HVAC duct near Penetration 2Z43-H182C. The strap wraps under the HVAC duct and is secured by one screw on the bottom of the duct. | 524311 | All screws are present securing the corresponding strap on the opposite side of the duct. The single remaining screw for the strap in question is judged adequate to maintain the connection between the strap and the HVAC and there is no potentially adverse seismic condition resulting. | Replace missing screw. | Open Due 11/27/2013 |

**Table 8-1. Potentially Adverse Conditions**

| Component / Area | Brief Description of Potentially Adverse Seismic Condition | CR # | Brief Discussion of Analysis/Conclusion | Action Taken or Planned to Address/ Resolve the Condition | Status (open/ closed) |
|---|---|---|---|---|---|
| 2R25-S129 | Seismic Walkdown Engineers observed on the 130' elevation of the Unit 2 Control Building in Room C-010 that there is one screw missing and one screw missing a washer on the Q2R25-S129 distribution panel. | 524321 | The remaining four screws are sufficient to hold the light gauge cover plate, so there is no potentially adverse seismic condition affecting the design function of the panel. | Replace the missing screw and washer. | Open Due 11/27/2013 |
| Unit 2 Control Building el 130' | Seismic Walkdown Engineers observed on the 130' elevation of the Unit 2 Control Building above transformer 1R11-S041 that there are three screws missing from a duct support strap on the side of an HVAC duct. The support strap wraps under the duct and is secured with one screw fastened into the bottom of the duct. | 524549 | The support strap wraps under the duct and is secured with one screw fastened into the bottom of the duct. The corresponding HVAC duct support strap on the opposite side of the duct has all screws fastened. The adjacent duct support has all screws present and fastened tightly. The HVAC duct is in good condition and all joints fastened securely in the inspected area. Based on these observations, the duct will perform its design function and have no adverse effects on other SSCs. | Replace missing screws | Open Due 11/27/2013 |
| Unit 2 Control Building el 130' | Seismic Walkdown Engineers observed on the 130' elevation of the Unit 2 Control Building in Room 2C114 that there are eight bolts missing from the north flange of the 56" x 30" HVAC duct at Penetration 2Z43-H750D on the west wall. | 524552 | The HVAC is supported at the wall by the flanged connection to the fire damper in the wall and by a strap support about two feet east of the flanged connection. Therefore, there is negligible load from the duct on the flanged connection. Eighteen bolts properly installed on the other visible sides of the duct at the flanged connection are judged sufficient to restrain the duct. The fire damper is not adversely affected by the flanged connection with the missing bolts. Therefore, there is no potentially adverse seismic condition created by the missing bolts. | Replace missing bolts. | Open Due 11/27/2013 |

**Table 8-1. Potentially Adverse Conditions**

| Component / Area | Brief Description of Potentially Adverse Seismic Condition | CR # | Brief Discussion of Analysis/Conclusion | Action Taken or Planned to Address/ Resolve the Condition | Status (open/ closed) |
|---|---|---|---|---|---|
| 2R42-S032A | Seismic Walkdown Engineers observed a loose hinge nut on the inside door panel of 2R42-S032A located in the Diesel Building Switchgear 2E on elevation 130'. | 524998 | The 125 Volt Battery Charger has another hinge located at the bottom of the door that is properly secured. The remaining hinge for the door in question is judged adequate to maintain the connection between the door and panel. Therefore, there is no potentially adverse seismic condition resulting. | Loose hinge nut should be tightened. | Open Due 11/27/2013 |
| 2E11-F004 | Seismic Walkdown Engineers (SWEs) identified that the 2E11-F004 Torus Suction Valve Motor Operator does not have a minimum of 1" space between the operator and the platform grating in NE Diagonal of the Unit 2 Reactor Building. The operator for the subject valve is almost resting on the platform at the 118'-10" elevation of the NE Diagonal Room. The predicted seismic movement of the valve operator will potentially cause impact between the motor operator and the platform grating. | 525108 | The grating is considered flexible compared to the valve operator and valve stem. So damage of the valve is unlikely. But having safety related valve operators this close to building structures is not seismically acceptable, due to the potential for creating high stresses.<br><br>Therefore, portions of the grating should be removed, as required, to provide a minimum of about 1" clearance at all locations around the valve operator. Do not remove any existing support steel for the grating. Additional grating support steel may be required to support the grating around the cut out section. | Portions of the grating should be removed to provide a minimum of about 1" clearance at all locations around the valve operator. Do not remove any existing support steel for the grating. Additional grating support steel may be required to support the grating around the cut out section. | Open Due 11/27/2013 |
| Unit 2 Nitrogen Storage Tank area | Seismic Walkdown Engineers observed Unit 2 Nitrogen Storage Tank Area contain some general coatings degradation and surface corrosion on the nearby pipe supports and piping. | 525163 | Due to multiple supports located throughout the area the load is minimal on each support. Therefore, supports and piping were judged to be seismically adequate by SWEs. | Clean and coat per procedure. | Open Due 11/27/2013 |

**Table 8-1. Potentially Adverse Conditions**

| Component / Area | Brief Description of Potentially Adverse Seismic Condition | CR # | Brief Discussion of Analysis/Conclusion | Action Taken or Planned to Address/ Resolve the Condition | Status (open/ closed) |
|---|---|---|---|---|---|
| 2T48-R075 and 2T48-R076 | Seismic Walkdown Engineers observed Oxygen Analyzer (2T48-R075) on the wall has 2 of the 4 bolts missing. These missing screws are located in the Unit 2 Nitrogen Storage Tank Room of the Reactor Building. Also, Oxygen Analyzer (2T48-R076) on the wall has 1 of the 4 bolts missing. | 525168 | These items are light weight components that are screwed into a concrete wall. Therefore, the remaining screws for the analyzers in question are judged adequate to maintain the connection between analyzer and the concrete wall, so there is no potentially adverse seismic condition resulting. | Replace missing screws. | Open Due 11/27/2013 |
| Unit 2 Reactor Building el 118' SE Diagonal | Seismic Walkdown Engineers observed on the 118' elevation of the Southeast diagonal in the Unit 2 Reactor, there is a junction box above conduit 2MR9314 with two out of six cover plate screws missing. | 525221 | The cover plate is very light, and the four remaining screws have sufficient capacity to restrain the cover plate, so there is no potentially adverse seismic condition. | Replace missing screws. | Open Due 11/27/2013 |
| Unit 2 Div 1 Yard Pit | Seismic Walkdown Engineers (SWEs) observed one out of four missing screws was observed on the front of the splitter box and one out of four screws missing on the Chemelex box supported against the wall. These missing screws are located in U2 Division 1 Yard Pit. | 525473 | The remaining screws for the splitter box in question are judged adequate to maintain connection during a seismic event due to the weight of the cover. Chemelex box is a light weight components that is screwed into a concrete wall. Therefore, the Chemelex box in question is judged adequate to maintain the connection between Chemelex box and the concrete wall, so there is no potentially adverse seismic condition resulting. | Replace missing screws. | Open Due 11/27/2013 |

During the course of the walkdowns the team identified issues that, while not rising to the level of a seismic concern, warranted evaluation to determine if programmatic enhancements are necessary. These issues have been entered into the SNC corrective action program.

CR # 516003 - The Seismic Walkdown Engineers (SWEs) identified that drawing B-45555, Version 1.0, "Seismic Configuration Control Requirements General Notes & Specifications", does not provide clear guidance how to restrain gas bottles when stored near safety-related equipment in the plant.

CR # 517213 - The Resident Inspector noted that several components inspected had various problems with bolting. He questioned the craftsmanship involving bolted connections as well as supervisory oversight of the maintenance activities involving bolted connections for the plant in general. The condition report was written for Maintenance management to determine the extent of the condition regarding the quality of bolting connections following maintenance activities.

## 8.2 EQUIPMENT OPERABILITY

Plant Hatch Unit 2 had no as-found conditions that would prevent SSCs from performing their required safety functions.

## 8.3 PLANT CHANGES

There were no plant changes that resulted from the as-found conditions. Plant changes are any planned or newly installed protection and mitigation features (i.e., plant modifications) that result from the Seismic Walkdowns or Area Walk-bys.

## 8.4 OTHER NON-SEISMIC CONDITIONS

Housekeeping items were identified during walkdowns and walk-bys that were not potentially seismic adverse conditions. All such items were brought to the attention of plant personnel and CRs were generated as necessary. These issues included water on the floor and loose items (small tools, trash, etc.) stored in the plant areas. These items were processed through the site CAP process and are not specifically documented in this report though are available in the Plant CAP database.

# 9.0 PEER REVIEW

## 9.1 PEER REVIEW PROCESS

The peer review for the Near Term Task Force (NTTF) Recommendation 2.3 Seismic Walkdowns was performed in accordance with Section 6 of the EPRI Report 1025286 (Reference 10.2). The peer review included an evaluation of the following activities:

- review of the selection of the structures, systems, and components, (SSCs) that are included in the Seismic Walkdown Equipment List (SWEL);
- review of a sample of the checklists prepared for the Seismic Walkdowns and Area Walk-bys;
- review of licensing basis evaluations and decisions for entering the potentially adverse conditions in to the plant's Corrective Action Plan (CAP); and
- review of the final submittal report.

This report provides results of the review process for each review activity as well as the results of the peer review.

## 9.2 PEER REVIEW RESULTS SUMMARY

### 9.2.1 Seismic Walkdown Equipment List Development

The selection of items for the SWEL underwent peer review according to the guidance in Section 3 of EPRI Report 1025286 (Reference 10.2). The SSCs to be evaluated during the Seismic Walkdown were selected as described in Section 6.0 of this report. The list of components was provided to the members of the Peer Review Team, which consisted of all four peer reviewers listed in Section 4.0. The Peer Review Team members independently provided comments to the personnel who selected the components on the SWEL. All comments were addressed and the Peer Review Team reviewed the changes made to the SWEL and the final SWEL, to ensure all recommendations from the EPRI Report 1025286 (Reference 10.2) were met. Specifically, the peer reviewers confirmed that all SSCs in SWEL 1 and 2 were Seismic Category I components that do not undergo regular inspections. Specific considerations for the peer review process are described below for SWEL 1 and SWEL 2. The peer review check sheet of the SWEL is provided in Attachment 2.

For SWEL 1, the Peer Review Team verified that the list of SSCs represented a diverse sample of the equipment required to perform the following five safety functions, as specified by EPRI Report 1025286 (Reference 10.2):

- Reactor Reactivity Control
- Reactor Coolant Pressure Control
- Reactor Coolant Inventory Control
- Decay Heat Removal and
- Containment Function

For SWEL 1, the Peer Review Team also verified that the SSCs included an appropriate representation of items having the following sample selection attributes:

- Various types of systems
- Major new and replacement equipment
- Various types of equipment
- Various environments
- Equipment enhanced based on the findings of the IPEEE and
- Risk insight consideration

The final SWEL 1 contains items that perform each of the five safety functions specified by EPRI Report 1025286 (Reference 10.2). Numerous components perform more than one of the safety functions and all five safety functions are well represented by the components on the list. SWEL 1 contains components from all the classes of equipment listed in Appendix B of EPRI Report 1025286 (Reference 10.2), except for cases where there are no safety-related components at the plant that fall into that specific equipment class. The list contains major new and replacement items, and items enhanced based on the IPEEE as well as equipment located in various environments and areas of the plant. All major safety-related systems are represented and risk factors were considered in development of the list.

For SWEL 2, the Peer Review Team determined that the process to select spent fuel pool related items complied with EPRI Report 1025286 (Reference 10.2). Portions of the spent fuel pool cooling system at Hatch Unit 2 are Seismic Category 1 and all different types of components associated with the Spent Fuel Pool Cooling system are represented on the SWEL 2. The Peer Review Team concluded that the bases for including/excluding items associated with the spent fuel pool were well documented and that the final SWEL 2 complies with EPRI Report 1025286 (Reference 10.2).

In summary, all of the Peer Review comments made during development of SWEL 1 and SWEL 2 were resolved by the team that prepared the SWELs. The resolutions were reviewed

by the Peer Review Team and it was determined that all comments were adequately addressed. The SWEL was determined to incorporate all comments made by the Peer Review Team during the process.

During the process of conducting the walkdowns, a small number of isolated components that were not accessible were removed from the list and in some cases, equivalent items that were determined to be accessible were added. The Peer Review Team reviewed all changes made to the SWELs and determined that these changes had no impact on the adequacy of the SWELs with respect to the provisions contained in the EPRI Report 1025286 (Reference 10.2). The Peer Review Team concludes that the team that developed the SWELs appropriately followed the SWEL development process described in Section 3 of the EPRI Report 1025286 (Reference 10.2).

The Peer Review Checklist for development of the SWEL is provided in Attachment 2.

9.2.2 Seismic Walkdowns and Area Walk-Bys

The Peer Review Team was on-site and very involved with the Seismic Component Walkdowns and Area Walk-bys. The Peer Review was performed as follows:

- Each of the three walkdown teams performed an initial equipment Seismic Walkdown and an Area Walk-by while being observed by the other teams and at least one member of the walkdown Peer Review Team. The Peer Review Team provided comments and suggestions and answered questions raised by the team performing the walkdown and the other walkdown teams.
- During the first week of walkdowns, a member of the walkdown Peer Review Team individually accompanied each of the SWE walkdown teams and observed the SWE team conducting the Seismic Walkdowns and Area Walk-bys. The Peer Review Team confirmed first-hand that the SWE walkdown teams performed the Seismic Walkdowns and Area Walk-bys as described in Section 4 of the EPRI Report 1025286 (Reference 10.2). A Peer Review Team member accompanied each of the three walkdown teams on at least one full day of walkdowns. SWE walkdown teams were encouraged and expected to carry a copy of Section 4 from the EPRI Report 1025286 (Reference 10.2) and refer to it as necessary, during conduct of the Seismic Walkdowns and Area Walk-bys.
- During the remaining weeks of walkdowns, at least one Peer Review Team member remained on site until the majority of the walkdowns were completed. The Peer Review Team member reviewed essentially all the SWCs and AWC prepared by the three walkdown teams. When the walkdown team members had questions or potential concerns,

the Peer Review Team member walked down the specific component or area along with the walkdown team to provide additional input to the seismic evaluations.

- At least one member of the walkdown Peer Review Team reviewed the Seismic Walkdown and Area Walk-by packages to ensure that the checklists were completed in accordance with the guidance provided in the EPRI Report 1025286 (Reference 10.2). The walkdown Peer Review Team confirmed that the Seismic Walkdown and Area Walk-by packages were consistent, thorough, and the packages accurately reflected the results of the walkdowns and walk-bys as witnessed during the first week of walkdowns.

The Peer Review Team concluded that the SWE teams were familiar with the process for Seismic Equipment Walkdowns and Area Walk-bys. The SWE teams adequately demonstrated their ability to identify potentially adverse seismic conditions such as adverse anchorage, adverse spatial interaction, other adverse conditions related to anchorage, and perform anchorage configuration verifications, where applicable. The SWEs also demonstrated the ability to identify seismically-induced flooding interactions and seismically-induced fire interactions. The SWEs documented the results of the Seismic Walkdowns and Area Walk-bys on the appropriate checklists from Appendix C of the EPRI Report 1025286 (Reference 10.2).

The Peer Review Team reviewed approximately 40% of the Seismic Walkdowns and Area Walk-by checklists and at least one member of the walkdown peer review team reviewed more than 90% of the packages. Peer review of the Seismic Walkdowns and Area Walk-bys identified minor editorial errors and also some instances where comments in the checklists required additional explanation and information. Mr. Ashworth and Mr. Whitmore provided verbal feedback to the SWEs to adjust these entries accordingly. The SWEs understood the comments and incorporated the recommendations and updates from the Peer Review Team.

Since the peer review occurred at the start of the Seismic Walkdowns, the peer reviewers were able to provide comments at every stage of the walkdown process to ensure consistency in the reporting for all packages. Therefore, the Peer Review Team considered the number of completed walkdown packages reviewed to be appropriate. In addition, all members of the Peer Review team, including Mr. Ashworth, Ms. Brown, Mr. Starck and Mr. Whitmore were available by phone as necessary during the entire Walkdown process.

9.2.3 Licensing Basis Evaluations

All potentially adverse seismic conditions identified were immediately entered into the plant CAP for further review and disposition as discussed in Section 8.1 of this report. Therefore, the Seismic Walkdown teams did not perform licensing basis evaluations apart from evaluations performed for the CAP. The Peer Review Team considers this CAP process approach fully comprehensive and acceptable for addressing the potentially adverse seismic conditions observed during the Seismic Walkdowns.

9.2.4 Submittal Report

The Peer Review Team was provided with drafts of the submittal report. This allowed the Peer Review Team to verify that the submittal report would meet the objectives and requirements of the EPRI Report 1025286 (Reference 10.2).

The Peer Review Team provided both verbal and written comments on the draft reports and was active in ensuring the report was thorough, complete and accurate. The final version of the submittal report includes all necessary elements of the Peer Review and meets the requirements of the 50.54(f) letter.

## 10.0 REFERENCES

10.1 10CFR50.54(f) Letter, 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 1025286, Seismic Walkdown Guidance for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic, June 2012

10.3 Generic Letter No. 88-20, Supplement 4, Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities

10.4 Generic Letter No. 87-02, Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issue (USI) A-46

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

10.6 SNC Calculation PRA-BC-H-10-008, Hatch Unit 1 PRA Model, Revision 4 (applicable to both units)

10.7 Final Safety Analysis Report (FSAR) for Edwin I. Hatch Nuclear Plant Unit 2

10.8 Hatch Letter 5102, dated January 26, 1996, and titled 'Edwin I. Hatch Nuclear Plant, Response to Generic Letter 88-20, Supplement 4', Docket Nos. 50-321 and 50-366

10.9 Edwin I. Hatch Nuclear Plant, USI A-46 Summary Report

10.10 EPRI Report NP-6041, A Methodology for Assessment of Nuclear Power Plant Seismic Margin

10.11 USAS B31.1, Code for Power Pressure Piping, 1967 Edition

10.12 USAS B31.7, Nuclear Power Piping, 1969 Edition

10.13 IEEE 323-1971, Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations

10.14 IEEE 323-1974, Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations

10.15 IEEE 344-1971, IEEE Recommended Practice for Seismic Qualification of Class 1E Equipment for Nuclear Power Generation Stations

10.16 IEEE 344-1975, IEEE Recommended Practice for Seismic Qualification of Class 1E Equipment for Nuclear Power Generation Stations

10.17 American Institute of Steel Construction (AISC), 7th Edition

## 11.0 ATTACHMENTS

ATTACHMENT 1 – SEISMIC WALKDOWN EQUIPMENT LISTS

ATTACHMENT 2 – UNIT 2 - PEER REVIEW CHECKLIST FOR SWEL 1 AND 2

ATTACHMENT 3 – SEISMIC WALKDOWN CHECKLISTS

ATTACHMENT 4 – AREA WALK-BY CHECKLISTS

ATTACHMENT 5 – IPEEE VULNERABILITIES INFORMATION

ATTACHMENT 6 – SEISMIC WALKDOWN ENGINEER CERTIFICATIONS

**Edwin I. Hatch Nuclear Plant – Unit 2**
**Seismic Recommendation 2.3 Walkdown Report Requested by NRC Letter, *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 Daiichi Accident*, dated March 12, 2012**

**Enclosure 2**

**Commitment Table**

| Commitment | Type | | Scheduled Completion Date (If Required) |
|---|---|---|---|
| | One-Time Action | Continuing Compliance | |
| • Complete the remaining NTTF 2.3 Seismic Walkdowns for inaccessible areas and provide the updated walkdown report to the NRC. These inaccessible areas are listed in Table 7-1 and Table 7-2 of the Hatch Unit 2 Seismic Walkdown Report (Enclosure 1 of this letter). These inaccessible areas and scope are shown below: | X | | 120 days from the end of 2R23 outage, currently scheduled for March 7, 2015 |

**Table 7-1. Inaccessible Equipment per Original Walkdown Scope**

| # | Item No. | Description | Remaining Walkdown Scope |
|---|---|---|---|
| 1. | 2R23-S003 | 600V STATION SERVICE SWGR 2C & XFMR | SWC and AWC |
| 2. | 2R23-S004 | 600V STATION SERVICE SWGR 2D & XFMR | SWC and AWC |
| 3. | 2R22-S016 | 250V DC BATTERY SWGR 2A | SWC and AWC |
| 4. | 2R22-S005 | 4160V SWGR EMERGENCY BUS 2E | SWC and AWC |
| 5. | 2R22-S007 | 4160V SWGR EMERGENCY BUS 2G | SWC and AWC |
| 6. | 2P64-F039 | RBCHW COIL INLET ISO AOV | SWC and AWC |
| 7. | 2P64-F029 | RBCHW COIL INLET ISO AOV | SWC and AWC |
| 8. | 2E11-F060A | LOOP A ISO GATE VALVE | SWC and AWC |
| 9. | 2E11-F009 | SHUTDOWN COOL INBRD ISO | SWC and AWC |
| 10. | 2T47-B007A | DW Cooling System Unit | SWC and AWC |
| 11. | 2T47-B009A | DW Cooling System Unit | SWC and AWC |
| 12. | 2T47-B008B | DW Cooling System Unit | SWC and AWC |
| 13. | 2P33-B001A | H2/02 ANALYZER SAMPLE CHILLER | SWC and AWC |

| Table 7-1. Inaccessible Equipment per Original Walkdown Scope | | | |
|---|---|---|---|
| # | Item No. | Description | Remaining Walkdown Scope |
| 14. | 2C71-P001 | RPS POWER DISTRIBUTION PANEL | SWC and AWC |
| 15. | 2R25-S001 | 125V DC DIV 2 CAB 2A | SWC and AWC |
| 16. | 2R25-S002 | 125V DC DIV 2 CAB 2B | SWC and AWC |
| 17. | 2R25-S004 | 125V DC CAB 2D | SWC and AWC |
| 18. | 2R25-S005 | 125V DC CAB 2E | SWC and AWC |
| 19. | 2R25-S036 | 120/208V AC ESS CAB 2A | SWC and AWC |
| 20. | 2R25-S064 | 120/208V AC VITAL CAB 2A INSTR BUS | SWC and AWC |
| 21. | 2R25-S037 | 120/208V AC ESS CAB 2B | SWC and AWC |
| 22. | 2R24-S021 | 2A RX BLDG 250V DC MCC | SWC and AWC |
| 23. | 2R24-S018B | 600VAC MCC 2E-B | SWC and AWC |

| Table 7-2. Inaccessible Equipment Resulting from Guidance on Opening Cabinets to Inspect for Other Adverse Conditions | | | |
|---|---|---|---|
| # | Item No. | Description | Remaining Walkdown Scope |
| 1. | 2R24-S011 | 600V MCC 2C ESS DIV 1 | Internal of panel |
| 2. | 2R24-S022 | 125/250V DC MCC 2B ESS DIV 2 | Internal of panel |
| 3. | 2P33-B001B | H2/02 ANALYZER SAMPLE CHILLER | Internal of panel |