### E Plan for Future Seismic Walkdown of Inaccessible Equipment

Sixteen (16) items could not be walked down during the 180-day period following the issuance of the 10CFR50.54(f) letter due to their being inaccessible. The items will be walked down during a unit outage or time when the equipment is accessible, as appropriate. Table E-1 summarizes the reasons each item is inaccessible during normal plant operation and notes the Oyster Creek Station Issue Report IR that has been written to track completion of the Seismic Walkdowns (and Area Walk-bys) for these items. It is noted that SSCs identified on Table E-1 require a complete inspection including, as applicable, internal inspections of electrical cabinets for other adverse seismic conditions, as required.

Certain cabinets require supplemental internal inspection for other adverse seismic conditions as summarized in Table E-2. Supplemental internal inspections of these cabinets are required due to clarification provided by the NRC after the online seismic walkdowns were completed. These Supplemental inspections will be completed during a unit outage or another time when the equipment is accessible, as appropriate. It is noted, that SSCs identified on Table E-1 do <u>not</u> appear on Table E-2.

Component ID	Description	Reason for Inaccessibility	Action Request ID (IR)	Resolution/ Status	Milestone Completion
V-1-160	SAFETY RELIEF VALVE NR28D (SOUTH HEADER)	Located in Drywell	1382250	Open	4Q2012
V-1-164	SAFETY RELIEF VALVE NR28H (NORTH HEADER)	Located in Drywell	1382250	Open	4Q2012
V-1-173	ELECTROMATIC RELIEF VALVE NR108-A(SOUTH HEADER)	Located in Drywell	1382250	Open	4Q2012
V-1-175	ELECTROMATIC RELIEF VALVE NR108-C(NORTH HEADER)	Located in Drywell	1382250	Open	4Q2012
V-1-177	ELECTROMATIC RELIEF VALVE NR108-E(SOUTH HEADER)	Located in Drywell	1382250	Open	4Q2012
V-16-1	CU INLET ISOLATION VALVE FROM REACTOR VESSEL	Located in Drywell	1382250	Open	4Q2012
V-1-106	MAIN STEAM LINE 'A' DRAIN VALVE	Located in Drywell	1382250	Open	4Q2012
V-1-7	MAIN STEAM LINE'A' OUTLET ISOLATION VALVE(NS03-A)	Located in Drywell	1382250	Open	4Q2012
RK-411-1	MSIV'S SOLENOID AIR VALVE & EQUIPMENT MOUNTING RACK	Located in Trunnion Room	1382250	Open	4Q2012
V-1-10	MAIN STEAM LINE'B' OUTLET ISOLATION VALVE(NS04-B)	Located in Trunnion Room	1382250	Open	4Q2012
1A21-460V	MCC 1A21 460V,3PH,3W,60HZ FOR TURBINE BUILDING	Clarification on opening cabinets was provided after initial walkdown	1382250	Open	4Q2012
1A21B- 460V	MCC 1A21B 460V,3P,3W,60HZ FOR REACTOR BUILDING	Clarification on opening cabinets was provided after initial walkdown	1382250	Open	4Q2012

#### Table E-1. Inaccessible and Deferred Equipment

Component ID	Description	Reason for Inaccessibility	Action Request ID (IR)	Resolution/ Status	Milestone Completion
1A23-460V	MCC 1A23 460V,3PH,3W,60HZ FOR REACTOR BUILDING	Clarification on opening cabinets was provided after initial walkdown	1382250	Open	4Q2012
1A2-460V	460V UNIT SUBSTATION 1A2 FOR REACTOR BUILDING	Must physically remove breakers to inspect internals.	1382250	Open	4Q2012
1C	4160V BUS 1C SWITCHGEAR	Clarification on opening cabinets was provided after initial walkdown	1382250	Open	4Q2012
DC-C 125V	125VDC POWER PANEL DC-C CENTER 'C'	Equipment always energized.	1382250	Open	4Q2018

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COMPONENT ID	DESCRIPTION	EQUIPMENT CLASS	ACCESSIBLE (Y/N)	IF NOT ACCESSIBLE, WHY?	MILESTONE COMPLETION	TRACKING NUMBER (IR No.)	STATUS / INSPECTION RESULTS
6R	MAIN CONTROL RM PANEL 6R REACTOR PROTECTION CH.1	(20) Instrumentation and Control Panels	interior inspection completed during online walkdown	N/A	N/A	N/A	closed/ no issue identified
7R	MAIN CONTROL RM PANEL 7R REACTOR PROTECTION CH.2	(20) Instrumentation and Control Panels	interior inspection completed during online walkdown	N/A	N/A	N/A	closed/ no issue identified
BTCHG C1	'C' STATION BATTERY SOLID STATE STATIC CHARGER C1	(16) Battery Chargers and Inverters	Y	N/A	4Q2012	IR 1382250 AR A2307028 WO C2028232	open
CIP-3	CONTINUOUS INSTRUMENT PNL NO.3 208/120V,3PH,4W, 60HZ	(14) Distribution Panels	Ν	Equipment always energized. Opening of doors will introduce undue safety and operational hazard	N/A	N/A	N/A

Table E-2. Supplemental Internal Cabinet Inspection List

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COMPONENT ID	DESCRIPTION	EQUIPMENT CLASS	ACCESSIBLE (Y/N)	IF NOT ACCESSIBLE, WHY?	MILESTONE COMPLETION	TRACKING NUMBER (IR No.)	STATUS / INSPECTION RESULTS
DC-F	125VDC POWER PANEL DC-F	(14) Distribution Panels	Ν	Equipment always energized. Opening of doors will introduce undue safety and operational hazard	N/A	N/A	N/A
DG-1 BATTERY CHARGER	DIESEL GENERATOR UNIT #1 BATTERY CHARGER	(16) Battery Chargers and Inverters	Y	N/A	1R24 refueling outage	IR 1382250 AR A2307028 WO C2028232	open
DG-1 SWGR	DIESEL GENERATOR #1 UNIT SWITCHGEAR	(20) Instrumentation and Control Panels	Y	N/A	1R24 refueling outage	IR 1382250 AR A2307028 WO C2028232	open
ER18A	CORE SPRAY/AUTO DEPRESS'N SYSTEM RELAY LOGIC PANEL	(20) Instrumentation and Control Panels	Y	N/A	1R24 refueling outage	IR 1382250 AR A2307028 WO C2028232	open

COMPONENT ID	DESCRIPTION	EQUIPMENT CLASS	ACCESSIBLE (Y/N)	IF NOT ACCESSIBLE, WHY?	MILESTONE COMPLETION	TRACKING NUMBER (IR No.)	STATUS / INSPECTION RESULTS
IP-4	120VAC INSTRUMENT PANEL 4 - 208/120V,3PH,4W	(14) Distribution Panels	Ν	Equipment always energized. Opening of doors will introduce undue safety and operational hazard	N/A	N/A	N/A
IT-4A	TRANSFORMER FROM MCC 1A2- 460V TO IP-4	(04) Transformers	Ν	Equipment always energized. Opening of doors will introduce undue safety and operational hazard	N/A	N/A	N/A
LSP-1A2	LOCAL SHUTDOWN PANEL- USS 1A2 PUMP/BREAKER CONTROL	(20) Instrumentation and Control Panels	Y	N/A	1R24 refueling outage	IR 1382250 AR A2307028 WO C2028232	open

COMPONENT ID	DESCRIPTION	EQUIPMENT CLASS	ACCESSIBLE (Y/N)	IF NOT ACCESSIBLE, WHY?	MILESTONE COMPLETION	TRACKING NUMBER (IR No.)	STATUS / INSPECTION RESULTS
PS-1	480/120VAC TRANSFORMER TO PROTECTION SYS PANELS 1&2	(04) Transformers	Ν	Equipment always energized. Opening of doors will introduce undue safety and operational hazard	N/A	N/A	N/A
VACP-1	120V VITAL AC POWER PANEL 208/120V,3PH,4W, 60HZ	(14) Distribution Panels	N	Equipment always energized. Opening of doors will introduce undue safety and operational hazard	N/A	N/A	N/A
VACP-1 XF	120V VITAL AC POWER PANEL TRANSFORMER 480/208/120V	(04) Transformers	N	Equipment always energized. Opening of doors will introduce undue safety and operational hazard	N/A	N/A	N/A

COMPONENT ID	DESCRIPTION	EQUIPMENT CLASS	ACCESSIBLE (Y/N)	IF NOT ACCESSIBLE, WHY?	MILESTONE COMPLETION	TRACKING NUMBER (IR No.)	STATUS / INSPECTION RESULTS
1A21A-460V	MCC 1A21A 460V, 3P, 3W, 60HZ, FOR REACTOR BUILDING	(01) MCC	Y	N/A	1R24 refueling outage	IR 1382250 AR A2307028 WO C2028232	OPEN
1A2-460V XF	USS 1A2-460V 4160-480V/277V 3PH 60HZ	(04) Transformers	N	Major disassembly required	N/A	N/A	N/A

### **F** Peer Review Report

This appendix includes the Peer Review Team's report, including the signed Peer Review Checklist for SWEL from Appendix F of the EPRI guidance document. (Ref. 1)

#### Peer Review Report <u>for</u> <u>Near Term Task Force (NTTF) Recommendation 2.3</u> <u>Seismic Walkdown Inspection</u> <u>of</u> <u>Oyster Creek Generating Station</u>

October 12, 2012

Prepared by Peer Reviewers

<u>Walter Djordjevic (Team Leader)</u> <u>Todd A. Bacon</u> <u>Tony Perez</u>

Walter Djordjevic

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October 12, 2012

Peer Review Team Leader Certification Signature

Date

### **1** Introduction

#### 1.1 OVERVIEW

This report documents the independent peer review for the Near Term Task Force (NTTF) Recommendation 2.3 Seismic Walkdowns performed by Stevenson & Associates (S&A) for Unit 1 of the Oyster Creek Generating Station (OCGS). The peer review addresses the following activities:

- Review of the selection of the structures, systems, and components, (SSCs) that are included in the Seismic Walkdown Equipment List (SWEL).
- Observation of the seismic walkdowns on August 23, 2012 and adherence to the Seismic Walkdown Guidance (SWG)<sup>1</sup> by Mr. Todd Bacon.
- Review of a sample of the checklists prepared for the Seismic Walkdowns & Walk-Bys.
- Review of licensing basis evaluations, as applicable.
- Review of the decisions for entering the potentially adverse conditions into the plant's Corrective Action Plan (CAP).
- Review of the final submittal report

The peer reviewers for OCGS, Unit 1 are Messrs. Walter Djordjevic, Todd A. Bacon, and Tony Perez, all of S&A. Mr. Djordjevic is designated the Peer Review Team Leader. None of the aforementioned engineers is involved in the seismic walkdown inspection process so that they can maintain their independence from the project. Mr. Djordjevic is an advanced degree structural engineer, has over thirty years of nuclear seismic experience and has been trained as a Seismic Capability Engineer (EPRI SQUG training), EPRI IPEEE Add-on, Seismic Fragility and Seismic Walkdown Engineer (SWE). Mr. Bacon is a civil-structural engineer with over thirty years of nuclear engineering experience and has received the Seismic Walkdown Engineer (SWE) training. Mr. Perez is a mechanical engineer with 15 years of experience and a trainee in a 9 month Senior Reactor Operator Certificate training program. Mr. Djordjevic, as Peer

<sup>&</sup>lt;sup>1</sup> EPRI Technical Report 1025286, *Seismic Walkdown Guidance for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic*, dated June 2012.

Review Team Leader, has participated in all phases of the peer review process for OCGS Unit 1.

The SWEL development was performed by Mr. T. K. Ram of S&A. No findings were cited on the peer review checklist. The completed SWEL Peer Review Checklist is found in Attachment 1. The discussion for the SWEL development peer review is found in Section 2.

The peer review of the seismic walkdown inspection started on August 23, 2012 with a peer check of the actual walkdowns for Unit 1. Mr. Bacon joined the walkdown team for a portion of the day's planned walkdowns to observe the conduct of walkdowns and adherence to the SWG. Interviews were conducted by Messrs. Bacon and Djordjevic with the SWE inspection team after review of a sample of the Unit 1 Seismic Walkdown Checklists (SWCs) and the Area Walk-by Checklists (AWCs) to ascertain procedural compliance with the SWG. The interviews were conducted with Mr. Mark Etre of the SWE inspection team on October 1, 2012 and Mr. Seth Baker of the SWE walkdown inspection team on October 2, 2012. The discussion of the sample SWCs and AWCs is provided in Section 3.

No issues were identified which challenged the current licensing basis.

### **2** Peer Review - Selection of SSCs

#### 2.1 PURPOSE

The purpose of this section is to describe the process to perform the peer review of the selected structures, systems, and components, (SSCs) that were included in the Seismic Walkdown Equipment List (SWEL).

This section documents the Peer Review – Selection of SSCs performed for Oyster Creek Generating Station – Unit 1.

#### 2.2 PEER REVIEW ACTIVITY - SELECTION OF SSCs

The guidance in EPRI Technical Report 1025286, *Seismic Walkdown Guidance for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic*, dated June 2012, Section 3: Selection of SSCs was used as the basis for this review.

This peer review was based on reviews of the following documents:

• Seismic Walkdown Interim Report, Revision 2, dated 08/10/2012

This peer review was based on interviews with the following individual who was directly responsible for development of the SWEL:

• Mr. Tribhawan (TK) Ram, Senior Mechanical Engineer

This peer review utilized the checklist shown in the SWG, Appendix F: Checklist for Peer Review of SSC Selection.

For SWEL 1 development, the following actions were completed in the peer review process:

- Verification that the SSCs selected represented a diverse sample of the equipment required to perform the following five safety functions:
  - Reactor Reactivity Control (RRC)
  - o Reactor Coolant Pressure Control (RCPC)
  - o Reactor Coolant Inventory Control (RCIC)
  - o Decay Heat Removal (DHR)
  - Containment Function (CF)

This peer review determined that the SSCs selected for the seismic walkdowns represent a diverse sample of equipment required to perform the five safety functions.

- Verification that the SSCs selected include 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
- o Equipment enhanced based on the findings of the IPEEE
- Risk insight consideration

This peer review determined that the SSCs selected for the seismic walkdowns include a sample of items that represent each attribute/consideration identified above.

For SWEL 2 development, the following actions were completed in the peer review process:

 Verification that spent fuel pool related items were considered and appropriately added to SWEL 2.

This peer review determined that spent fuel pool related items were given appropriate consideration. Portions of the spent fuel pool cooling system are classified as Seismic Category 1 (Class I) and SWEL 2 was sufficiently populated as appropriate. There were items identified as potentially related to rapid drain down and these items were added to SWEL 2 as appropriate.

• Verification that appropriate justification was documented for spent fuel pool related items that were not added to the SWEL 2.

This peer review determined that an appropriate level of justification was documented for those items related to the spent fuel pool that were not added to SWEL 2.

#### 2.3 PEER REVIEW FINDINGS – SELECTION OF SSCs

This peer review found that the process for selecting SSCs that were added to the SWEL was consistent with the process outlined in the SWG Section 3: Selection of SSCs.

The peer review checklist is attached to this document with additional findings documented as appropriate.

This peer review resulted in no additional findings.

#### 2.4 RESOLUTION OF PEER REVIEW COMMENTS - SELECTION OF SSCs

All comments requiring resolution were incorporated prior to completion of this peer review.

#### 2.5 CONCLUSION OF PEER REVIEW - SELECTION OF SSCs

This peer review concludes that the process for selecting SSCs to be included on the seismic walkdown equipment list appropriately followed the process outlined in the SWG, Section 3: Selection of SSCs. It is further concluded that the SWEL sufficiently represents a broad population of plant Seismic Category 1 (Class I) equipment and systems to meet the objectives of the NRC 50.54(f) letter.

# **3** Review of Sample Seismic Walkdown & Area Walk-Bys Checklists

#### 3.1 OVERVIEW

A peer review of the SWCs and AWCs was performed on August 23, 2012, after which an interview was conducted by Messrs. Djordjevic and Bacon with the SWE inspection team in accordance with the SWG requirements on October 1 and 2, 2012. The SWE trained walkdown engineers were Messrs. Mark Etre and Seth Baker.

#### **3.2 SAMPLE CHECKLISTS**

Table 3-1 lists the SWC and AWC samples which represent approximately 25% of the SWCs and 25% of the AWCs. The sample includes the equipment inspected during the peer review participation and other equipment items from other classes to introduce diversity to the sampling procedure.

Equipment Identification	Equipment Class (GIP)	Walkdown Item	Observations
1A2-460V XF	4 - Transformers	USS 1A2-460V Trans. 4160-480V/277V 3PH 60HZ	No concerns
1A21A-460V	1 - Motor Control Centers	MCC 1A21A 460V,3P,3W,60HZ for Reactor Building	No concerns
7R	1 - Motor Control Centers	Main Control Room Panel 7R Reactor Protection CH.2	No concerns
305-125\26-19	21 - Tanks and Heat Exchangers	Main Control Room Panel 7R Reactor Protection CH.2	No concerns
Battery Bank C	15 - Batteries on Racks	Vital Bank 'C' Station Battery (Lead Acid)	No concerns
CV-305-126\30- 03	7 - Fluid Operated Valves	CRD Inlet Scram Valve (South)	No concerns

#### Table 3-1: Table of SWC and AWC Samples from Seismic Walkdown Inspection for Unit 1

Equipment Identification	Equipment Class (GIP)	Walkdown Item	Observations
CV-305-127\30- 03	7 - Fluid Operated Valves	CRD Outlet Scram Valve (South)	No concerns
DC-C 125V	14 - Distribution Panels	125VDC Power Panel DC-C Center 'C'	No concerns
DG-1 SWGR	20 - Instrumentation and Control Panels and Cabinets	Diesel Generator No.1 Unit Switchgear	No concerns
DPT-6-IA0091B	18 - Instruments on Racks	Fuel Zone Level 'B' Wide Range Level Transmitter	No concerns
FN-732-3	9 - Fans	USS 1A2-460V Transformer Cooling Fan	No concerns
H-21-1A	21 - Tanks and Heat Exchangers	Cont. Spray System Heat Exchanger 1-1	No concerns
LI-18-170	18 - Instruments on Racks	Skimmer Surge Tank 'A' Fuel Pool Level Indicator	No concerns
LS-862-10C	0 - Other	Hi-Hi Level(Pump Cut- off) On Tank T-39-003	No concerns
LSP-1A2	20 - Instrumentation and Control Panels and Cabinets	Local Shutdown Panel- USS 1A2 Pump/Breaker Control	No concerns
P-18-1C	5 - Horizontal Pumps	Augmented Spent Fuel Pool Pump (NN01-C)	No concerns
P-39-13	5 - Horizontal Pumps	Fuel Oil Pump to Day Tank T-39-3	No concerns
PI-305-131\06-15	0 - Other	Accumulators Gas Pressure Indicator	No concerns
PS-RE0017A	18 - Instruments on Racks	Low Reactor Press. Switch Readies Core Spray Valves	No concerns
RK-411-1	18 - Instruments on Racks	MSIV'S Solenoid Air Valve and Equipment Mounting Rack	No concerns

Equipment Identification	Equipment Class (GIP)	Walkdown Item	Observations
SO-305-117\06- 15	8 - Motor-Operated and Solenoid- Operated Valves	Channel I Scram Air Pilot Solenoid Valve (North)	No concerns
SO-305-120\06- 15	8 - Motor-Operated and Solenoid- Operated Valves	Directional Flow Control Withdraw Solenoid Valve (North)	No concerns
T-18-1A	21 - Tanks and Heat Exchangers	Skimmer Surge Tank 'A' For Spent Fuel Storage Pool	No concerns
T-39-5	21 - Tanks and Heat Exchangers	M-39-1 Cooling Water Tank	No concerns
V-1-7	7 - Fluid Operated Valves	Main Steam Line 'A' Outlet Isolation Valve(NS03-A)	No concerns
V-1-173	7 - Fluid Operated Valves	Electromatic Relief Valve NR108-A (South Header)	No concerns
V-17-212	8 - Motor-Operated and Solenoid- Operated Valves	SDC Loop 'A' Outlet Header Vent Valve	No concerns
V-18-80	0 - Other	PI-18-88 Isolation Valve	No concerns
V-20-15	8 - Motor-Operated and Solenoid- Operated Valves	"A" Containment Isolation Valve – SYS.I	No concerns
VACP-1 XF	4 - Transformers	120V Vital AC Power Panel Transformer 480/208/120V	No concerns

Area Walkdown Description	Observations
DGB Area 2 - El. 23.00'	No concerns
RB Area 6 - El. 51.00'	Bent hanger rod by airlock - IR 01402715.
RB Area 10 - El. 23.00'	No concerns
RB Area 15 - El. 51.00'	No concerns
RB Area 19 - El. 19.00'	No concerns
TB Area 25 - El. 23.00'	No concerns
OB Area 5 - El. 35.00'	No concerns

#### **3.3 EVALUATION OF FINDINGS**

There were no findings that challenged the licensing basis. Tables 5-2 and 5-3 of the Seismic Walkdown Report (final submittal report) provide the lists of the issues identified for the equipment seismic walkdowns and area walk-bys.

The scaffolding and seismic housekeeping procedures were reviewed by the SWEs in order to gain a full understanding of the plant practices in regard to those procedures. There were no seismic concerns noted in Unit 1 with regard to scaffold erection. The scaffolds were properly tied off and braced, and properly tagged with respect to the procedure.

Concerning seismic housekeeping, there was one instance found throughout the plant concerning ladder storage adjacent to a tank. It can be concluded that OCGS, Unit 1 implements their seismic housekeeping program consistently and to a high standard.

Items identified during the Seismic Walkdowns and Area Walk-bys were ultimately not judged to be "Potentially Adverse Seismic Conditions", as summarized in Sections 5.2 and 5.3 of the Seismic Walkdown Report. There were minor instances of loose hardware (bolts/nuts) and a few bent hanger rods. There was an instance of an open shook on a light fixture. In all instances issues identified were judged that they would not prevent the equipment from performing its safety-related function.

The Seismic Walkdown Checklists document the details of all issues identified, the action taken and the conclusion rendered by the SWE inspectors.

The peer reviewers consider the judgments made by the SWEs to be appropriate and in concurrence with the SWG.

### **4** Review of Licensing Basis Assessments

Tables 5-2 and 5-3 of the Seismic Walkdown Report provide a list of the issues identified during the Unit 1 seismic walkdown inspections for the SWEL components and how they were addressed. If an Oyster Creek Generating Station IR request was generated it is shown in the Tables. Interviews were conducted by Messrs. Djordjevic and Bacon with the SWE inspection team on October 1 and October 2, 2012 to discuss the issues identified. No potentially adverse seismic conditions were identified that resulted in a seismic licensing basis evaluation. The peer reviewers concur with this outcome.

# **5** Review Final Submittal Report & Sign-off

The final submittal report has been reviewed by Messrs. W. Djordjevic, A. Perez and T. A. Bacon and found to meet the requirements of the EPRI 1025286 – Seismic Walkdown Guidance. The Peer Review determined that the objectives and requirements of the 50.54(f) letter<sup>2</sup> are met. Further, the efforts completed and documented within the final submittal report are in accordance with the EPRI guidance document.

<sup>&</sup>lt;sup>2</sup> NRC Letter to All Power Reactor Licensees et al., "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendation 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," Enclosure 3, "Recommendation 2.3: Seismic," dated March 12, 2012

#### Peer Review Checklist for SWEL - Oyster Creek Generating Station - Unit 1

#### **Instructions for Completing Checklist**

This peer review checklist may be used to document the review of the Seismic Walkdown Equipment List (SWEL) in accordance with Section 6: Peer Review. The space below each question in this checklist should be used to describe any findings identified during the peer review process and how the SWEL may have changed to address those findings. Additional space is provided at the end of this checklist for documenting other comments. 1. Were the five safety functions adequately represented in the SWEL 1 selection?  $Y \boxtimes N \square$ No comments. 2. Does SWEL 1 include an appropriate representation of items having the following sample selection attributes: a. Various types of systems?  $Y \boxtimes N \square$ No comments. b. Major new and replacement equipment?  $Y \boxtimes N \square$ No comments. c. Various types of equipment?  $Y \boxtimes N \square$ No comments. d. Various environments?  $Y \boxtimes N \square$ No comments. e. Equipment enhanced based on the findings of the IPEEE (or equivalent) program?  $Y \boxtimes N \square$ 

No comments.

#### - Ovster Creek Generating Station - Unit 1 Peer Review Checklist for SWEL

Attachment 1

f. Were risk insights considered in the development of SWEL 1? No comments.	Y⊠ N□
3. For SWEL 2:	
<ul> <li>a. Were spent fuel pool related items considered, and if applicable included in SWEL 2?</li> <li>No comments.</li> </ul>	Y⊠ N□
<ul> <li>b. Was an appropriate justification documented for spent fuel pool related items not included in SWEL 2?</li> <li>No comments.</li> </ul>	Y⊠ N□
4. Provide any other comments related to the peer review of the SWELs. None.	
5. Have all peer review comments been adequately addressed in the final SWEL?	Y⊠ N□
Tony Perez   Top     Peer Reviewer #1:	/31/2012

Walter Djordjevic

Peer Reviewer #2:

Date: <u>09/02/2012</u>

Oyster Creek Generating Station Unit 1 Correspondence No.: RS-13-065

### Annex A

Updated Transmittal #1

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### A1 Introduction

#### A1.1 PURPOSE

This updated transmittal report is being provided in compliance with the requirements contained in Enclosure 3 of the NRC 50.54(f) letter dated March 12, 2012 (Ref. 13). This new report section, Annex A, contains the results of the follow-on inspection activities that have been completed to address commitments contained in Exelon letter to the NRC, "180-day Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Seismic Aspects of Recommendation 2.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated November 19, 2012 (RS-12-177). Annex A, includes follow-on Seismic Walkdown results associated with NRC Commitment Nos. 1 and 2 listed in Enclosure 2 of the above Exelon letter. Additionally, the update includes the current status of the resolution of conditions found during the initial Seismic Walkdowns and Area Walk-Bys as documented in Tables 5-2 and Table 5-3, respectively, from Enclosure 1 of the above Exelon letter.

Commitment No. 1, for the completion of the 16 remaining inspection (SWEL) items previously deferred due to inaccessibility listed in Table E-1, remains open. This update documents the completion of 15 of the 16 inspection items in accordance with the individual item completion schedule. The remaining inspection item, listed in Table AE-1, will be completed by the original 4Q2018 (December 31, 2018) commitment date. A subsequent NRC transmittal will be issued to document results of this inspection and the completion of Commitment No. 1.

Commitment No. 2, for the completion of the 6 remaining internal electrical cabinet inspections listed in Table E-2, has been completed. All 6 inspection items were completed by the commitment date of 4Q2012 (December 31, 2012) and the results are documented in this update.

The initial NRC Transmittal report documented that 3 conditions identified during the Seismic Walkdowns, and listed in Table 5-2, remained open. This update documents that all 3 conditions are now resolved with all follow-on actions complete.

The initial NRC Transmittal report documented that 3 conditions identified during the Area Walk-Bys, and listed in Table 5-3, remained open. This update documents that all 3 conditions are now resolved with all follow-on actions complete.

Annex A, includes updates to each report section where the status has changed or new information is available in accordance with Section 8 of EPRI 1025286, "Seismic Walkdown Guidance – For Resolution of Fukushima Near Term Task Force Recommendation 2.3 Seismic" (Ref. 1).

#### A1.2 BACKGROUND

See Section 1.2

#### A1.3 PLANT OVERVIEW

See Section 1.3

#### A1.4 APPROACH

See Section 1.4

#### A1.5 CONCLUSION

As of December 31, 2012, Seismic Walkdowns have been completed at the Oyster Creek Generating Station Unit 1 on 15 of the16 items deferred due to inaccessibility along with 6 remaining supplemental inspections of electrical cabinets, in accordance with the NRC endorsed walkdown methodology. Area Walk-Bys were also completed, as required, during these follow-on activities. No degraded, nonconforming, or unanalyzed conditions that required either immediate or follow-on actions were identified.

Additional follow-on activities required to complete the efforts to address Enclosure 3 of the 50.54(f) letter include inspection of one item deferred due to inaccessibility, as listed in Table AE-1 of this Annex A.

As of January 18, 2013, all conditions identified during the walkdowns and walk-bys as documented in IRs listed in Table 5-2 and Table 5-3 have been corrected.

No IRs were generated during the follow-on walkdowns. The updated completion status for the previous IRs is shown in Table A5-2 and Table A5-3 in Section A5 of this Annex A.

### A2 Seismic Licensing Basis

See Section 2, no new licensing basis evaluations resulted from the follow-on walkdown activities.

### **A3** Personnel Qualifications

#### A3.1 OVERVIEW

This section of the report identifies the personnel that participated in the NTTF 2.3 Seismic Walkdown efforts. A description of the responsibilities of each Seismic Walkdown participant's role(s) is provided in Section 2 of the EPRI guidance document. Resumes provided in Appendix A, and Appendix AA in this Annex A, provide detail on each person's qualifications for his or her role.

#### A3.2 PROJECT PERSONNEL

Table A3-1 below summarizes the names and corresponding roles of personnel who participated in the NTTF 2.3 Seismic Walkdown effort.

Name	Equipment Selection Engineer	Plant Operations	Seismic Walkdown Engineer (SWE)	Licensing Basis Reviewer	IPEEE Reviewer	Peer Reviewer
A. Perez		· · · · · · · · · · · · · · · · · · ·				X <sup>(1)</sup>
K. Hull	X					
T.K. Ram	X					
M. Etre			X	X		
S. Baker			X	X		
W. Ho (Exelon)			X	X	X	
A. Osam-Duodu (Exelon) <sup>(3)</sup>						X
M. Hand (Exelon) <sup>(3)</sup>			· · · · · · · · · · · ·			X <sup>(2)</sup>
E. DeMonch (Exelon)		Х				
Notes:				•	<b>.</b>	•

Table	A3-1.	Personnel	Roles
IGNIO	/	1 010011101	1.0100

1. Peer Review Team member for SWEL review only.

2. Peer Review Team Leader.

3. Personnel for follow-on activities only. Resumes provided in Appendix AA.

#### A3.2.1 Stevenson & Associates Personnel

See Section 3.2.1, no new S&A personnel participated in the follow-on activities.

#### A3.2.2 Additional Personnel

See Section 3.2.2, the following additional Exelon personnel participated in the followon activities:

Exelon Engineering staff member Mr. Anthony Osam-Duodu is a member of the peer review team for updated transmittal #1. He has worked at Oyster Creek Generating Station since 2007. He has a Ph. D. in Civil Engineering from Columbia University, New York. He is also a Seismic Capability Engineer (SCE). Anthony has over 25 years of experience covering all aspect of Civil/Structural Engineering and Project Management. He has been involved in all aspects of plant modification/configuration change activities at Oyster Creek. Other activities include the following: SQUG walkdown/seismic evaluation, Equipment Dynamic Qualification Test reviews, Rigging evaluations, Lead Shielding, Scaffolding, Structural Monitoring, and other support activities.

Exelon Engineering Design staff member, Mr. Michael Hand, is Peer Review Team Leader for updated transmittal #1. Mr. Hand is a Structural Engineer, Level 3 and has worked at Oyster Creek since 2006. He holds the Seismic Capability Engineer (SCE) certification and is fully qualified to perform all aspects of structural/seismic SSC analysis, design and qualification. He also is Program Owner of the OC Structures Monitoring Program and ensures compliance with Maintenance Rule requirements. Mr. Hand has over 30 years experience in various aspects of civil/structural engineering and project management, including 13 years of nuclear experience, and is often called upon to mentor less experienced engineers.

### A4 Selection of SSCs

See Section 4, no changes were made to the SWEL for the follow-on walkdowns.

## A5 Seismic Walkdowns and Area Walk-Bys

#### A5.1 OVERVIEW

Follow-on Seismic Walkdowns and Area Walk-Bys were conducted by a two (2) person team of trained Seismic Walkdown Engineers (SWEs), in accordance with the EPRI guidance document during the fourth quarter of 2012. The Seismic Walkdowns and Area Walk-Bys are discussed in more detail in the following sub-sections.

Consistent with the EPRI guidance document, Section 4: Seismic Walkdowns and Area Walk-Bys, the SWEs used their engineering judgment, based on their experience and training, to identify potentially adverse seismic conditions. Where needed, the engineers were provided the latitude to rely upon new or existing analyses to support their judgment.

The SWEs conducted the Seismic Walkdowns and Area Walk-Bys together as a team. During the evaluations, the SWEs actively discussed their observations and judgments with each other. The results of the Seismic Walkdowns and Area Walk-Bys reported herein are based on the comprehensive agreement of the SWEs.

#### A5.2 SEISMIC WALKDOWNS

These follow-on Seismic Walkdowns focused on the seismic adequacy of the items previously deferred due to inaccessibility listed on Table E-1 of this report. The Seismic Walkdowns also evaluated the potential for nearby SSCs to cause adverse seismic interactions with the items being inspected. The Seismic Walkdowns focused on the following adverse seismic conditions associated with the subject equipment:

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

The results of the follow-on Seismic Walkdowns were documented in Appendix AC of this Annex A, using the Seismic Walkdown Checklist (SWC) template provided in the EPRI guidance document. Seismic Walkdowns were performed and SWCs were completed for 15 of the 16 items identified on Table E-1 of this report. Additionally, photos have been included with most SWCs to provide a visual record of the item along with any comments noted on the SWC. Drawings and other plant records are cited in some of the SWCs, but are not included with the SWCs because they are readily retrievable documents through the station's document management system.

During the follow-on walkdowns, one item on Table E-1 was found energized and thus inaccessible. The walkdown of this item is deferred to a time when the equipment is accessible. Appendix AE of this Annex A identifies the inaccessible equipment along with the plan for future Seismic Walkdowns.

The following subsections describe the approach followed by the SWEs to identify potentially adverse anchorage conditions, adverse seismic interactions, and other adverse seismic conditions during the Seismic Walkdowns.

#### A5.2.1 Adverse Anchorage Conditions

See Section 5.2.1, no adverse anchorage conditions were identified during the follow-on walkdowns.

#### A5.2.2 Configuration Verification

See Section 5.2.2, no additional configuration verification was required. However, the configuration of all accessible internal anchors of electrical cabinets was verified.

#### A5.2.3 Adverse Seismic Spatial Interactions

See Section 5.2.3, no adverse seismic spatial interactions were identified during the follow-on walkdowns.

#### A5.2.4 Other Adverse Seismic Conditions

See Section 5.2.4, no other adverse seismic conditions were identified during the followon walkdowns.

#### A5.2.5 Conditions Identification during Seismic Walkdowns

No conditions were identified during the follow-on walkdowns.

Per Section 5.2.5 and Table 5-2, during the previous Seismic Walkdowns five (5) conditions were identified and entered into the Corrective Action Program. Corrective actions were completed to address two (2) of the five (5) conditions. Subsequent to the issuance of the last report corrective actions were completed to address the remaining three (3) conditions. Table A5-2 of this Annex A provides an updated summary of the conditions and the status of the corrective actions to address these conditions.

#### A5.3 AREA WALK-BYS

The purpose of the Area Walk-Bys is to identify potentially adverse seismic conditions associated with other SSCs located in the vicinity of the items being inspected. Vicinity is generally defined as the room containing the item. If the room is very large (e.g., Turbine Hall), then the vicinity is identified based on judgment, e.g., on the order of about 35 feet from the item. Additional vicinity associated with these follow-on Seismic Walkdowns but not covered in Appendix D, is described on the Area Walk-By Checklist (AWC), shown in Appendix AD of this Annex A. A total of four (4) additional AWCs were completed for Oyster Creek Unit 1 as a result of these follow-on walkdowns.

The key examination factors that were considered during Area Walk-Bys include the following:

- Anchorage conditions (if visible without opening equipment)
- Significantly degraded equipment in the area
- A visual assessment (from the floor) of cable/conduit raceways and HVAC ducting (e.g., condition of supports or fill conditions of cable trays)
- Potentially adverse seismic interactions including those that could cause flooding, spray, and fires in the area

- Other housekeeping items that could cause adverse seismic interaction (including temporary installations and equipment storage)
- Scaffold construction was inspected to meet Exelon Procedure MA-AA-796-024, Scaffold Installation Inspection and Removal
- Seismic housekeeping was examined to meet station procedure 119.5, Loose Equipment Storage

The Area Walk-Bys are intended to identify adverse seismic conditions that are readily identified by visual inspection, without necessarily stopping to open cabinets or taking an extended look. Therefore, the Area Walk-By took significantly less time than it took to conduct the Seismic Walkdowns described above. If a potentially adverse seismic condition was identified during the Area Walk-By, then additional time was taken, as necessary, to evaluate adequately whether there was an adverse condition and to document any findings.

The results of the Area Walk-Bys were documented on the AWCs included in Appendix AD of this Annex A. A separate AWC was filled out for each area inspected. A single AWC was completed for areas where more than one item was located.

Additional details for evaluating the potential for adverse seismic interactions that could cause flooding, spray, or fire in the area are provided in Section 5.3 of this report.

#### A5.3.1 Conditions Identification during Area Walk-Bys

No conditions were identified during the Area Walk-Bys associated with the follow-on walkdowns.

Per Section 5.3.1 and Table 5-3, during the previous seismic walkdowns five (5) conditions were identified and entered into the Corrective Action Program. Corrective actions were completed to address two (2) of the five (5) conditions. Subsequent to the issuance of the last report corrective actions were completed to address the remaining three (3) conditions. Table A5-3 of this Annex A provides an updated summary of the conditions and the status of the corrective actions to address these conditions.

#### **A5.4 SUPPLEMENTAL INFORMATION ON ELECTRICAL CABINET INSPECTIONS**

See Section 5.4, these follow-on walkdowns completed the supplemental internal inspections of six (6) open items on Table E-2. No conditions were identified.

Components identified as "always energized" in Table E-2 were excluded from the inspections due to associated safety and operational hazard.

The Seismic Walkdown Checklists (SWC) for these six (6) components were documented in Appendix AC of this Annex A to indicate the results of these supplemental internal inspections.

Item ID	Description of Issue	Action Request ID (IR)	Actions Complete Yes/No
1A2-460V	Loose bolts at 1A2-460V USS	1403294	Yes
DC-F	Loose thermometer at DC-F panel	1406823	Yes
1A21B- 460V MCC	Open hooks at 1A21B-460V MCC	1403305	Yes
H-21-1A	Broken bolts at containment spray heat exchangers H-21-1A and -1B	1403183	Yes
V-15-133	Seismic interaction between valves V-15-133 and V-6-2917	1403039	Yes

#### Table A5-2. Conditions Identified during Seismic Walkdowns

Notes:

1) "Yes" indicates that any corrective actions resulting from the issue are complete

2) "No" indicates that any corrective actions resulting from the issue are NOT complete. Actions are tracked by the IR number in the station CAP.

Item ID	Description of Issue	Action Request ID (IR)	Actions Complete Yes/No
RK-3 Area	Bent hanger rod by RB 51' airlock.	1402715	Yes
Diesel Fuel Oil Storage	Loose ladder adjacent to diesel oil tank	1405874	Yes
A-480V Switchgear Room	Bent hanger rod at 1A23-460V MCC	1403359	Yes
4160V A&B Room	Loose nut at strap hanger adjacent to 1B-4160V switchgear	1405576	Yes
DG 1 Room	Mislabeled level indicators at EDG day tanks	1405561	Yes

#### Table A5-3. Conditions Identified during Area Walk-Bys

Notes:

1) "Yes" indicates that any corrective actions resulting from the issue are complete

2) "No" indicates that any corrective actions resulting from the issue are NOT complete. Actions are tracked by the IR number in the station CAP.
## A6 Licensing Basis Evaluations

See Section 6, no new licensing basis evaluations were performed as a result of conditions identified during the follow-on Walkdowns or Area Walk-Bys.

## **A7** IPEEE Vulnerabilities Resolution Report

See Section 7, no changes to the IPEEE vulnerabilities resolution were made for this Annex A.

### **A8** Peer Review

A peer review team consisting of at least two individuals was assembled and peer reviews were performed in accordance with Section 6: Peer Reviews of the EPRI guidance document. The Peer Review process included the following activities:

- Review of the selection of SSCs included on the SWEL, if the SWEL has been revised
- Review of a sample of the checklists prepared for the Seismic Walkdowns and Area Walk-Bys
- Review of Licensing basis evaluations, as applicable
- Review of the decisions for entering the potentially adverse conditions into the CAP process
- Review of the submittal report
- Provide a summary report of the peer review process in the submittal report

The peer reviews were performed independently from this report and the summary Peer Review Report is provided in Appendix AF of this Annex A.



See Section 9, no new references were added for this Annex A.

# **Appendix AA Project Personnel Resumes and SWE Certificates**

Resumes and certificates (where applicable) for the following people are found in Appendix A:
T.K. Ram, Equipment Selection Engineer A-2
K. Hull, Equipment Selection EngineerA-4
M. Etre, SWE, Licensing Basis Reviewer
S. Baker, SWE, Licensing Basis ReviewerA-10
W. Ho, SWE, Licensing Basis Reviewer, IPEEE Reviewer A-13
A. Perez, SWEL Peer Reviewer A-16
Resumes and certificates (where applicable) for the following people are found in Appendix AA of this Annex A:

A. Osam-Duodu, Peer Reviewer	AA-2
M. Hand, Peer Review Team Leader	AA-5

#### **CURRICULUM VITAE**

NAME:

#### ANTHONY OSAM-DUODU

**PROFESSION:** 

#### CIVIL/STRUCTURAL ENGINEER

#### **KEY QUALIFICATIONS:**

Anthony Osam-Duodu has extensive experience as a Civil Engineer covering the areas of planning, design, and construction supervision. The over twenty five (25) years of experience cover all aspects of Civil Engineering and Project Management. He is also a Seismic Capability Engineer (EPRI SQUG training).

He has been involved in all aspects of plant modification/configuration change activities at Oyster Creek Generating Station. Other activities at the plant include the following: SQUG walkdown/seismic evaluation, Equipment Dynamic Qualification Test reviews, Rigging evaluations, Lead Shielding, Scaffolding, Structural Monitoring, and other support activities. As a project manager/engineer on various civil engineering projects (as described in this Resume), Anthony has effectively performed the following Project Management activities:

• Responsible for all the services associated with the day-to-day administration of the contracts and the technical control of the various civil works.

• Ensured that works were carried out in accordance with the Technical Specifications and Contract Documents.

• Prepared reports for the various projects.

• Checked and certified interim and final payment certificates for contractors/vendors.

#### **EDUCATION**

1997 *Certificate*, Institution of Management and Public Administration (GIMPA). World Bank/Works Procurement Management Course.

1980-86 M.S. & Ph.D. Civil Engineering, Columbia University, New York.

1977 B.Sc. Civil Engineering, University of Science and Technology, Ghana.

#### **EMPLOYMENT RECORD**

4/2007 - 6/2007

Oyster Creek Generating Station Engineer III

& 9/2007 – Present Engineer III Involved in all aspects of plant modification/configuration change activities at the plant. Other activities include the following: SQUG walkdown/seismic evaluation, Equipment Dynamic Qualification Test reviews, Rigging evaluations, Lead Shielding, Scaffolding, Structural Monitoring, and other support activities.

#### NOV. 2005 - OCT. 2006 *Icon Engineering, New Jersey.* Project Engineer

Prepared the Engineering Report for three accessory building structures at the Bayonne Golf Club, New Jersey. The structures are the Storage Building, The Gate House, and the Comfort Station. Designed and supervised the said three structures at the Bayonne Golf Club.

#### JUNE 1995 - JULY 2005 Department of Urban Roads, Accra. Principal Consulting Engineer

Performed field study of the various bridges/culverts in Metropolitan/Municipal Assembly areas in Ghana. This involved evaluation of the structural performance of said structures, design and supervision of their maintenance/rehabilitation.

MAR. 1993- MAY 1995 *The Consortium (CIHSD), Accra.* Principal Consulting Engineer

Designed and supervision of a clinic and administration office structures for the Accra market. Accra Sewerage System Improvement/ Water Supply Improvement Study in association with Messrs. SOGREAH of France.

DEC. 1987- FEB. 1993 Department of Environmental Protection, Trenton, NJ. Senior Engineer

Coordinated with and provided technical assistance to other Agencies, Divisions and Bureaus.

JUNE 1986- MAR. 1987 *Gibbs & Hill Consulting Engineers, New York.* Structural Engineer

Assisted in the structural design of a nuclear plant in Texas.



Presents this Certificate of Achievement

To Certify That

## Anthony Osam-Duodu

has Completed the SQUG Walkdown Screening and Seismic Evaluation Training Course Held August 23-27, 2010



Tichard & Starche II

Richard G. Starck<sup>11</sup>, MPR Associates, Inc. SQUG Instructor

Paul D. Baughman, ARES Corporati SQUG Instructor

#### MICHAEL J. HAND Structural Engineer

#### EDUCATION

Bachelor of Science - Civil Engineering Technology, Fairleigh Dickinson University

#### EXPERIENCE

#### EXELON GENERATION, Oyster Creek Nuclear Generating Station, Forked River, NJ (July 2006 to Present)

STRUCTURAL ENGINEER (Level 3), Design structural plant modifications, defend plant design basis, manage Structures Monitoring Program and perform inspections, subject matter expert in seismic design and qualification of systems, structures and components using industry standards and methods such as SQUG-GIP, IEEE 344, EPRI, STERI, NARE, SQURTS. Perform System Manager duties for structural (building) systems such as Maintenance Rule reviews and project presentations. Requires thorough knowledge of 10CFR50 NRC regulations and industry guidelines. Mentor next generation of Structural Engineers in nuclear.

#### PORT AUTHORITY OF NEW YORK AND NEW JERSEY, Newark, NJ (2003 to 2006)

STRUCTURAL ENGINEER, Engineering Dept.-Quality Assurance Division; Perform structural condition inspections and prepare condition survey reports for various Port Authority structures such as buildings, bridges, tunnels, waterfront structures, and high mast lighting structures. Perform emergency structural integrity inspections and prepare design for temporary corrective repair as required. Duties include field audit and review of reports prepared by consultants.

#### INNOVATIVE ENGINEERING, Toms River, NJ (2001 to 2003)

SENIOR STRUCTURAL ENGINEER, Performed structural analysis and design for wireless telecommunications industry. Designed antenna and steel equipment frames on building rooftops and on grade. Required familiarity with applicable building and design codes such as AISC (steel), ACI (concrete), AITC (timber), NYC Building Code, IBC and BOCA Codes, and industry specifications such as EIA/TIA design standards. Qualified existing structures for additional loading. Used Staad.Pro frame analysis program and wrote programs in MS Excel for quick analysis of various steel and masonry configurations. Used Autocad 2000.

#### STRATUS ENGINEERING, Cranbury, NJ (2000 to 2001)

PROJECT MANAGER / STRUCTURAL ENGINEER, Managed project team of architects, structural engineers, designers and drafters for design and preparation of drawings and specifications for major structural modifications to the East River Power Plant in New York City. Included checking and verification of Staad.Pro computer model input for structural frame analysis. Designed a reinforced concrete, explosion-resistant gas compressor room. Also performed manual structural analyses for various concrete and steel structures for Consolidated Edison.

#### PORT AUTHORITY OF NEW YORK AND NEW JERSEY, Jersey City, NJ (1988 to 2000)

ENGINEERING PROJECT MANAGER / STRUCTURAL TASK LEADER, Engineering Dept.; Managed preparation of multi-discipline construction plans and specifications for the repair of deteriorated runways, taxiways, railroad facilities, roadways, bridges, buildings and tunnels at various PA facilities, Develop baseline schedules, cost plans and project scope through contact and negotiations with client Line Department. Duties included preparation of "short form" contracts, reviewing and analyzing bid results, and recommending award of contract. Also managed consultants in performing the above mentioned design services, to ensure that contract documents are prepared in conformance with Port Authority standards, on time and within budget. Coordinated several groups in project effort including other governmental agencies and outside interests.

#### Port Authority Awards:

- "James G. Hellmuth Unit Citation Award", 1998 for the Rehabilitation of Runway 4R-22L, Newark Int. Airport; Managed and coordinated project team from all Engineering Department divisions for successful completion of record setting overlay of deteriorating runway in preparation of new, larger aircraft. Required presentations to, and coordination with airline representatives to obtain 30% reduction in aircraft departures to allow for an unprecedented continuous two-week closure in lieu of a 6-9 month intermittent nighttime closure.
- "Engineering Excellence Award", 1997 for five years perfect attendance.

#### MICHAEL J. HAND

PROJECT MANAGER, STRUCTURAL INTEGRITY UNIT, RAIL PLANNING DIV., PATH; Provided Project Management (Stage I-IV) services essential to the structural integrity, maintenance and rehabilitation of PATH structures. Addressed priority structural repairs through implementation of the major works program. Responded to real and perceived structural integrity issues presented by the facility, with follow-up for resolution as required. Acted as principal link between facility, Engineering Department, and other departments and outside entities.

#### STONE AND WEBSTER ENGINEERING CORP., New York, NY (July 1987 to November 1987)

STRUCTURAL ENGINEER; Qualification and analysis of pipe supports by manual calculation and computer analysis for the Sequoia Nuclear Power Plant, Tennessee Valley Authority. Included use of ASME Codes, AISC and AWS Specifications and STRUDL computer program frame analysis.

GIBBS & HILL, INC., New York, NY (1985 to 1987)

ASSOCIATE STRUCTURAL ENGINEER, FIELD ENGINEER; Qualified various steel frames and connections for the Comanche Peak Nuclear Power Plant, TX. Position required manual calculation and computer analysis capabilities as well as analysis by computer program. At the Susquehanna Steam Electric Station, PA, checked structural integrity of changes made to cable tray supports. Routed and designed supports for electrical conduit and process piping.

NUCLEAR POWER SERVICES, INC., Secaucus, NJ (1981 to 1985)

STRUCTURAL ENGINEER; Determined loads in building steel due to pipe and conduit supports under seismic conditions for the Braidwood Nuclear Power Plant, Braidwood, III. Position required structural analysis capabilities as mentioned above.

FIELD ENGINEER; Resolved pipe support field installation problems presented by the craft at the Byron Nuclear Power Plant, Byron III., and the Perry Nuclear Power Plant, North Perry, OH. Position required a familiarity with pipe support erection tolerances, installation procedures, and welding methods and procedure (including AWS standards). Checked structural integrity of changes made to pipe supports by manual calculation. Also performed as-built field inspections on installed pipe supports and piping systems to ensure compliance with NRC I.E. Bulletin 79-14 specifications.

STRUCTURAL DESIGN ENGINEER; Analyzed pipe supports by manual calculation to ensure structural integrity using working stress methods with reference to ASME Section III Codes and AISC Specifications. Included STRUDL and BASEPLATE program computer modeling.

#### **CERTIFICATIONS and TRAINING**

Seismic Capability Engineer (SCE) Engineer-In-Training (E-I-T) Certificate Pursuing PE license in New Jersey STAAD.PRO Training Certificate Situational Leadership Training - Port Authority of NY & NJ Management Training Series - Port Authority of NY & NJ

#### AFFILIATIONS

American Society of Civil Engineers, American Institute of Steel Construction National Society of Professional Engineers Toastmasters International (Communication and Leadership Training) – Past President The Engineering Advisory Group (at PANYNJ) – Past President

VOLUNTEER SERVICE:

Boy Scouts of America - *Assistant Scoutmaster* St. Rose of Lima Catholic Church – *Building Committee, Liturgical Minister* 



Certificate of Achievement This is to Certify that

### Michael J. Hand

has Completed the SQUG Walkdown Screening and Seismic Evaluation Training Course Held June 11-15, 2007



Richard G. Starck<sup>II</sup>, MPR Associates, Inc. SQUG Instructor

Paul D. Baughman, ARES Corporation SQUG Instructor

### **Appendix AC** Seismic Walkdown Checklists (SWCs)

. 1

Table AC-1 provides a description of each item, anchorage verification confirmation, a list of Area Walk-By Checklists associated with each item and comments of each Seismic Walkdown Checklist. All items in Table AC-1 were deferred items listed in Table E-1 of this report, and were accessible during the follow-on walkdowns.

Table AC-2 provides a description of each item subject to supplemental internal inspections. All items in Table AC-2 were electrical cabinets subject to Supplemental Internal Inspections as listed in Table E-2 of this report, and were accessible without safety and operational hazard.

Component ID	DESCRIPTION	Anchorage Configuration Confirmed?	Area Walk- by	Comments
V-1-160	SAFETY RELIEF VALVE NR28D (SOUTH HEADER)	N/A	31	This is an In-Line Component
V-1-164	SAFETY RELIEF VALVE NR28H (NORTH HEADER)	N/A	32	This is an In-Line Component
V-1-173	ELECTROMATIC RELIEF VALVE NR108-A(SOUTH HEADER)	N/A	31	This is an In-Line Component
V-1-175	ELECTROMATIC RELIEF VALVE NR108-C(NORTH HEADER)	N/A	32	This is an In-Line Component
V-1-177	ELECTROMATIC RELIEF VALVE NR108-E(SOUTH HEADER)	N/A	31	This is an In-Line Component
V-16-1	CU INLET ISOLATION VALVE FROM REACTOR VESSEL	N/A	31	This is an In-Line Component
V-1-106	MAIN STEAM LINE 'A' DRAIN VALVE	N/A	30	This is an In-Line Component
V-1-7	MAIN STEAM LINE'A' OUTLET ISOLATION VALVE(NS03-A)	N/A	30	This is an In-Line Component
RK-411-1	MSIV'S SOLENOID AIR VALVE & EQUIPMENT MOUNTING RACK	N/A	29	Not one of the 50% for which an anchor configuration verification is required
V-1-10	MAIN STEAM LINE'B' OUTLET ISOLATION VALVE(NS04-B)	N/A	29	This is an In-Line Component
1A21-460V	MCC 1A21 460V,3PH,3W,60HZ FOR TURBINE BUILDING	YES	9	Supports are consistent with Drawing 3E-153-38-016 Rev 0
1A21B-460V	MCC 1A21B 460V,3P,3W,60HZ FOR REACTOR BUILDING	YES	7	Supports are consistent with Calculation C-1302-732-5320-014 Rev 0
	MCC 1A23 460V,3PH,3W,60HZ FOR REACTOR BUILDING	YES		See Seismic Qualification SQ-OC-1A23- 460V-MCC Rev 1. Upper supports are consistent with Drawing 3E-153-38-016
1A23-460V			9	Rev 0
	460V UNIT SUBSTATION 1A2 FOR REACTOR BUILDING	YES		See Seismic Qualification SQ-OC-1A2- 460V-USS Rev 2. Partial Inspection opened one panel, however, could see approximately 1/3 of the total anchorages. No issues found. Therefore, the anchor Inspection is met. The other panels would not be opened by ops due to the fact that, this is always energized.
1A2-460V	4160V BUS 1C SWITCHGEAR	VES	11 28	See S0-0C-1C-4160V Bey 03
		1 113	1 20	

#### Table AC-1. Summary of Seismic Walkdown Checklists

Component ID	DESCRIPTION
BTCHG C1	'C' STATION BATTERY SOLID STATE STATIC CHARGER C1
DG-1 BATTERY CHARGER	DIESEL GENERATOR UNIT #1 BATTERY CHARGER
DG-1 SWGR	DIESEL GENERATOR #1 UNIT SWITCHGEAR
ER18A	CORE SPRAY/AUTO DEPRESS'N SYSTEM RELAY LOGIC PANEL
LSP-1A2	LOCAL SHUTDOWN PANEL- USS 1A2 PUMP/BREAKER CONTROL
1A21A-460V	MCC 1A21A 460V, 3P, 3W, 60HZ, FOR REACTOR BUILDING

#### Table AC-2. Summary of Seismic Walkdown Checklists for Supplemental Internal Inspections

Seismic Walkdown Checklist (SWC)	tatus: [Y] N U
Equipment ID No.: V-1-160	
Equipment Class: (7) Fluid-Operated Valves	
Equipment Description: SAFETY RELIEF VALVE NR28D (SOUTH HEADER)	
Project: Oyster Creek SWEL	
Location (Bldg, Elev, Room/Area): DW, 46.00 ft, 31	
Manufacturer/Model:	
Instructions for Completing Checklist	·····
This checklist may be used to document the results of the Seismic Walkdown of an item of equ SWEL. The space below each of the following questions may be used to record the results of j findings. Additional space is provided at the end of this checklist for documenting other comme	ipment on the judgments and ents.
Anchorage	No
<ol> <li>Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?</li> </ol>	NO
2. Is the anchorage free of bent, broken, missing or loose hardware?	Not Applicable
3. Is the anchorage free of corrosion that is more than mild surface oxidation?	Not Applicable
4. Is the anchorage free of visible cracks in the concrete near the anchors?	Not Applicable
<ol> <li>Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.)</li> </ol>	Not Applicable
6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions?	Yes

Oyster Creek Generating Station Unit 1 Correspondence No.: RS-13-065 Sheet 2 of 3

Seismic Walkdown Check	ist (SWC)	Status: Y N U
Fauinment ID N	· V-1-160	
Equipment Clas	s: (7) Fluid-Operated Valves	
Equipment Descriptio	a: SAFETY RELIEF VALVE NR28D (SOUTH HEADER)	· · · · · · · · · · · · · · · · · · ·
Interaction Effects		
7. Are soft targets free	from impact by nearby equipment or structures?	Yes
8. Are overhead equip masonry block walls	nent, distribution systems, ceiling tiles and lighting, and not likely to collapse onto the equipment?	Yes
9. Do attached lines h	ve adequate flexibility to avoid damage?	Yes
10. Based on the above potentially adverse	seismic interaction evaluations, is equipment free of eismic interaction effects?	Yes
Other Adverse Conditions 11. Have you looked fo adversely affect the	and found no adverse seismic conditions that could safety functions of the equipment?	Yes
Comments See Seismic Qualification S	Q-OC-V-1-0160 Rev 0	
Evaluated by:	Mark S. Etre Date:	10/26/2012
Photos		

Oyster Creek Generating Station Unit 1 Correspondence No.: RS-13-065 Sheet 3 of 3

Seismic Walkdown Checklist	Status: Y N U (SWC)		
Equipment ID No.:	V-1-160		
Equipment Class:	(7) Fluid-Operated Valves		
Equipment Description:	SAFETY RELIEF VALVE NR28D (SOUTH HEADER)		

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	Equipment ID No.: V-1-164	
	Equipment Class: (7) Fluid-Operated Valves	
	Equipment Description: SAFETY RELIEF VALVE NR28H (NORTH HEADER)	
	Project: Oyster Creek SWEL	
ocatio	on (Bldg, Elev, Room/Area): _ DW, 46.00 ft, 32	
	Manufacturer/Model:	
nstru	ctions for Completing Checklist	
his cl WEL nding	hecklist may be used to document the results of the Seismic Walkdown of an item The space below each of the following questions may be used to record the res gs. Additional space is provided at the end of this checklist for documenting other	of equipment on the ults of judgments and comments.
ncho	orage	
1.	Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?	N
2.	Is the anchorage free of bent, broken, missing or loose hardware?	Not Applicabl
3.	Is the anchorage free of corrosion that is more than mild surface oxidation?	Not Applicabl
4.	Is the anchorage free of visible cracks in the concrete near the anchors?	Not Applicabl
5.	Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.)	Not Applicable
	Based on the above anchorage evaluations, is the anchorage free of	Ye

Oyster Creek Generating Station Unit 1 Correspondence No.: RS-13-065 Sheet 2 of 3

Seismic Walkdown Checkli	st (SWC)	Status: Y N U
Equipment ID No	· V-1-164	
Equipment Class	: (7) Fluid-Operated Valves	
Equipment Description	SAFETY RELIEF VALVE NR28H (NORTH HEADER)	
Interaction Effects		
7. Are soft targets free f	rom impact by nearby equipment or structures?	Yes
8. Are overhead equipm masonry block walls	nent, distribution systems, ceiling tiles and lighting, and not likely to collapse onto the equipment?	Yes
9. Do attached lines hav	ve adequate flexibility to avoid damage?	Yes
10. Based on the above potentially adverse set	seismic interaction evaluations, is equipment free of eismic interaction effects?	Yes
Other Adverse Conditions	and found no adverse seismic conditions that could	Ves
adversely affect the s	safety functions of the equipment?	105
<u>Comments</u> See Seismic Qualification SC	2-OC-V-1-0164 Rev 0	
Evaluated by:	Mark S. Etre Date:	10/26/2012
Se	Bur Seth W. Baker	10/26/2012
Photos		

Oyster Creek Generating Station Unit 1 Correspondence No.: RS-13-065 Sheet 3 of 3



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Status: Y N Seismic Walkdown Checklist (SWC)	U
Equipment ID No.: V-1-173	
Equipment Class: (7) Fluid-Operated Valves	
Equipment Description: ELECTROMATIC RELIEF VALVE NR108-A(SOUTH HEADER)	
Project: Oyster Creek SWEL	
Location (Bldg, Elev, Room/Area): DW, 46.00 ft, 31	
Manufacturer/Model:	—
Instructions for Completing Checklist	
This checklist may be used to document the results of the Seismic Walkdown of an item of equipment on the SWEL. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.	
Anchorage	
<ol> <li>Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?</li> </ol>	)
2. Is the anchorage free of bent, broken, missing or loose hardware? Not Applicable	Э
3. Is the anchorage free of corrosion that is more than mild surface oxidation? Not Applicable	Э
4. Is the anchorage free of visible cracks in the concrete near the anchors? Not Applicable	Э
<ol> <li>Is the anchorage configuration consistent with plant documentation? (Note: Not Applicable This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.)</li> </ol>	9
<ol> <li>Based on the above anchorage evaluations, is the anchorage free of Yes potentially adverse seismic conditions?</li> </ol>	S

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Seismic Walkdown Checklis	t (SWC)	YNU
Equipment ID No :		
Equipment Class:	(7) Fluid-Operated Valves	
Equipment Description:	ELECTROMATIC RELIEF VALVE NR108-A(SOUTH HEADER)	
Interaction Effects		N/
7. Are son largets free in	om impact by hearby equipment or structures?	res
<ol> <li>Are overhead equipme masonry block walls n</li> </ol>	ent, distribution systems, ceiling tiles and lighting, and ot likely to collapse onto the equipment?	Yes
9. Do attached lines have	e adequate flexibility to avoid damage?	Yes
10. Based on the above so potentially adverse set	eismic interaction evaluations, is equipment free of ismic interaction effects?	Yes
Other Adverse Conditions 11. Have you looked for a adversely affect the sa	nd found no adverse seismic conditions that could afety functions of the equipment?	Yes
Comments         See Seismic Qualification SQ-         Evaluated by:	OC-V-1-0173 Rev 0 Mark S. Etre Date: 10/26/2012 MARMAN Sath W. Balan	
	Seth W. Baker 10/26/2012	
<u>Photos</u>		

Oyster Creek Generating Station Unit 1 Correspondence No.: RS-13-065 Sheet 3 of 3

<u></u>		1.000	
Status:	Y	N	U

#### Seismic Walkdown Checklist (SWC)

Equipment ID No.: V-1-173

Equipment Class: (7) Fluid-Operated Valves

Equipment Description: ELECTROMATIC RELIEF VALVE NR108-A(SOUTH HEADER)





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Equipment ID No.:       V-1-175         Equipment Class:       (7) Fluid-Operated Valves         Equipment Description:       ELECTROMATIC RELIEF VALVE NR108-C(NORTH HEADE         Project:       Oyster Creek SWEL         Location (Bldg, Elev, Room/Area):       DW, 46.00 ft, 32         Manufacturer/Model:       Instructions for Completing Checklist         This checklist may be used to document the results of the Seismic Walkdown of an item of equipment SWEL. The space below each of the following questions may be used to record the results of findings. Additional space is provided at the end of this checklist for documenting other comm         Anchorage       1. Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?	Status: Y N U
Equipment Class:       (7) Fluid-Operated Valves         Equipment Description:       ELECTROMATIC RELIEF VALVE NR108-C(NORTH HEADE         Project:       Oyster Creek SWEL         Location (Bldg, Elev, Room/Area):       DW, 46.00 ft, 32         Manufacturer/Model:       Instructions for Completing Checklist         This checklist may be used to document the results of the Seismic Walkdown of an item of equipment SWEL. The space below each of the following questions may be used to record the results of findings. Additional space is provided at the end of this checklist for documenting other comm         Anchorage       1. Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?	
Equipment Description:       ELECTROMATIC RELIEF VALVE NR108-C(NORTH HEADE         Project:       Oyster Creek SWEL         Location (Bldg, Elev, Room/Area):       DW, 46.00 ft, 32         Manufacturer/Model:       Instructions for Completing Checklist         This checklist may be used to document the results of the Seismic Walkdown of an item of equipment SWEL. The space below each of the following questions may be used to record the results of findings. Additional space is provided at the end of this checklist for documenting other comm         Anchorage       1. Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?	
Project: Oyster Creek SWEL Location (Bldg, Elev, Room/Area): DW, 46.00 ft, 32 Manufacturer/Model: Instructions for Completing Checklist This checklist may be used to document the results of the Seismic Walkdown of an item of equ SWEL. The space below each of the following questions may be used to record the results of findings. Additional space is provided at the end of this checklist for documenting other comm Anchorage 1. Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?	R)
Location (Bldg, Elev, Room/Area): DW, 46.00 ft, 32 Manufacturer/Model: Instructions for Completing Checklist This checklist may be used to document the results of the Seismic Walkdown of an item of equ SWEL. The space below each of the following questions may be used to record the results of findings. Additional space is provided at the end of this checklist for documenting other comm Anchorage 1. Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?	·
Manufacturer/Model:         Instructions for Completing Checklist         This checklist may be used to document the results of the Seismic Walkdown of an item of equ         SWEL. The space below each of the following questions may be used to record the results of findings. Additional space is provided at the end of this checklist for documenting other comm         Anchorage         1. Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?	
Instructions for Completing Checklist This checklist may be used to document the results of the Seismic Walkdown of an item of equ SWEL. The space below each of the following questions may be used to record the results of findings. Additional space is provided at the end of this checklist for documenting other comm <u>Anchorage</u> 1. Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?	
<ul> <li>This checklist may be used to document the results of the Seismic Walkdown of an item of equidate SWEL. The space below each of the following questions may be used to record the results of findings. Additional space is provided at the end of this checklist for documenting other comm</li> <li>Anchorage         <ol> <li>Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?</li> </ol> </li> </ul>	···· · · · · · · · · · · · · · ·
<ul> <li>Anchorage</li> <li>1. Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?</li> </ul>	uipment on the judgments and ents.
<ol> <li>Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?</li> </ol>	
	No
<ul><li>2. Is the anchorage free of bent, broken, missing or loose hardware?</li><li>3. Is the anchorage free of corrosion that is more than mild surface oxidation?</li></ul>	Not Applicable Not Applicable
4. Is the anchorage free of visible cracks in the concrete near the anchors?	Not Applicable
<ol> <li>Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.)</li> </ol>	Not Applicable
6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions?	Yes

#### Oyster Creek Generating Station Unit 1 Correspondence No.: RS-13-065 Sheet 2 of 4

Seismic Walkdown Checklist (	SWC)	Status: Y N U
Equipment ID No.:	V-1-175	
Equipment Class:	(7) Fluid-Operated Valves	
- Equipment Description:	ELECTROMATIC RELIEF VALVE NR108-C(NORTH HE	ADER)
Interaction Effects		
7. Are soft targets free from	n impact by nearby equipment or structures?	Yes
<ol> <li>Are overhead equipmen masonry block walls not</li> </ol>	t, distribution systems, ceiling tiles and lighting, and likely to collapse onto the equipment?	Yes
9. Do attached lines have a	adequate flexibility to avoid damage?	Yes
10. Based on the above seis potentially adverse seis	smic interaction evaluations, is equipment free of nic interaction effects?	Yes
Other Adverse Conditions		
11. Have you looked for and adversely affect the safe <i>Conduit Box partially o</i> <i>Outage and will be repa</i>	I found no adverse seismic conditions that could ety functions of the equipment? pen. Per operations this is being worked on during the ired prior to start-up.	Yes
Comments		
See Seismic Qualification SQ-O	C-V-1-0175 Rev 0	
Evaluated by:	Mark S. Etre Date:	10/26/2012 10/26/2012
<u>Photos</u>	· · · · · · · · · · · · · · · · · · ·	

Oyster Creek Generating Station Unit 1 Correspondence No.: RS-13-065 Sheet 3 of 4

Salamia Walkdown Chasklist			Status: Y N U
Equipment ID No :	V-1-175		
Equipment Class:	(7) Eluid-Operated Valves	· ·	
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Oyster Creek Generating Station Unit 1 Correspondence No.: RS-13-065 Sheet 4 of 4

Saiamia Walkdown Chaaklist	(SWC)		Status: Y N U
Equipment ID No.:	V-1-175		
Equipment Class:	(7) Fluid-Operated Va	alves	
Equipment Description:	ELECTROMATIC RE	LIEF VALVE NR108-C	(NORTH HEADER)
		IMG_4485	

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Seismic Walkdown Checklist	(SWC)	Status: Y N U
Equipment ID No.:	V-1-177	
Equipment Class:	(7) Fluid-Operated Valves	
Equipment Description:	ELECTROMATIC RELIEF VALVE NR108-E(SOUTH HEAD	ER)
Proje	ct: Oyster Creek SWEL	
Location (Bldg, Elev, Room/Area	a): DW, 46.00 ft, 31	
Manufacturer/Mod	el:	
Instructions for Completing C	hecklist	
This checklist may be used to do SWEL. The space below each of findings. Additional space is pro-	ocument the results of the Seismic Walkdown of an item of ea of the following questions may be used to record the results o ovided at the end of this checklist for documenting other comm	quipment on the of judgments and ments.
<u>Anchorage</u>		
<ol> <li>Is anchorage configurat of SWEL items requiring</li> </ol>	ion verification required (i.e., is the item one of the 50% g such verification)?	No
2. Is the anchorage free of	bent, broken, missing or loose hardware?	Not Applicable
3. Is the anchorage free of	f corrosion that is more than mild surface oxidation?	Not Applicable
4. Is the anchorage free of	visible cracks in the concrete near the anchors?	Not Applicable
5. Is the anchorage config This question only appli configuration verification	uration consistent with plant documentation? (Note: es if the item is one of the 50% for which an anchorage n is required.)	Not Applicable
<ol> <li>Based on the above and potentially adverse seis</li> </ol>	chorage evaluations, is the anchorage free of mic conditions?	Yes

#### Oyster Creek Generating Station Unit 1 Correspondence No.: RS-13-065 Sheet 2 of 4

Salamia Walkdown Chaokli		Status: Y N U
Seisinic waikuowii Checkii		
Equipment ID No.	V-1-177	
Equipment Class	(7) Fluid-Operated Valves	
Equipment Description	ELECTROMATIC RELIEF VALVE NR108-E(SOUTH HE	ADER)
<u>Interaction Effects</u> 7 Are soft targets free f	rom impact by nearby equipment or structures?	Yes
8. Are overhead equipm	ent. distribution systems, ceiling tiles and lighting, and	Yes
masonry block walls	not likely to collapse onto the equipment?	
9. Do attached lines hav	e adequate flexibility to avoid damage?	Yes
10. Based on the above a potentially adverse so	seismic interaction evaluations, is equipment free of eismic interaction effects?	Yes
Other Adverse Conditions		
11. Have you looked for adversely affect the s <i>Minor damage to fle</i> <i>during the Outage ar</i>	and found no adverse seismic conditions that could afety functions of the equipment? xible conduit. Per operations this is being worked on d will be repaired prior to start-up.	Yes
Comments See Seismic Qualification SC	-OC-V-1-0177 Rev 0	
Evaluated by:	Mark S. Etre Date:	10/26/2012
Se	Seth W. Baker	10/26/2012
Photos		

Oyster Creek Generating Station Unit 1 Correspondence No.: RS-13-065 Sheet 3 of 4



Oyster Creek Generating Station Unit 1 Correspondence No.: RS-13-065 Sheet 4 of 4

Seismic Walkdown Che	Status:	YNU
Equipment I	No.: V-1-177	
Equipment C	ass: (7) Fluid-Operated Valves	
Equipment Descri	tion: ELECTROMATIC RELIEF VALVE NR108-E(SOUTH HEADER)	
MG: 4476	<image/> <image/> <image/>	
11/10_44/0	IIVIG_44 / /	

Seismic Walkdown Checklist (	(SWC)	Status: Y N U
Equipment ID No.:	V-16-1	
Equipment Class:	(8) Motor-Operated and Solenoid-Operated Valves	
Equipment Description:	CU INLET ISOLATION VALVE FROM REACTOR VESSEL	•
Projec	ct: Oyster Creek SWEL	
Location (Bldg, Elev, Room/Area	a): DW, 46.00 ft, 31	
Manufacturer/Mode	el:	
Instructions for Completing C	hecklist	
This checklist may be used to do SWEL. The space below each of findings. Additional space is pro-	ocument the results of the Seismic Walkdown of an item of e of the following questions may be used to record the results ovided at the end of this checklist for documenting other com	equipment on the of judgments and of judgments.
<u>Anchorage</u>		
<ol> <li>Is anchorage configuration of SWEL items requiring</li> </ol>	ion verification required (i.e., is the item one of the 50% g such verification)?	No
2. Is the anchorage free of	bent, broken, missing or loose hardware?	Not Applicable
3. Is the anchorage free of	corrosion that is more than mild surface oxidation?	Not Applicable
4. Is the anchorage free of	visible cracks in the concrete near the anchors?	Not Applicable
<ol> <li>Is the anchorage configuration only application configuration verification</li> </ol>	uration consistent with plant documentation? (Note: es if the item is one of the 50% for which an anchorage n is required.)	Not Applicable
<ol><li>Based on the above and potentially adverse seis</li></ol>	chorage evaluations, is the anchorage free of mic conditions?	Yes

Oyster Creek Generating Station Unit 1 Correspondence No.: RS-13-065 Sheet 2 of 4

Seismic Wal	kdown Checklist	(SWC)	Status: Y N U
E	auipment ID No.:	V-16-1	
E	Equipment Class:	(8) Motor-Operated and Solenoid-Operated Valves	
Equipr	ment Description:	CU INLET ISOLATION VALVE FROM REACTOR VESSE	L
Interaction E	Effects		
7. Are s	oft targets free fro	m impact by nearby equipment or structures?	Yes
8. Are c masc	overhead equipme onry block walls no	nt, distribution systems, ceiling tiles and lighting, and t likely to collapse onto the equipment?	Yes
9. Do a	ttached lines have	adequate flexibility to avoid damage?	Yes
10. Base poter	d on the above sentially adverse sei	ismic interaction evaluations, is equipment free of smic interaction effects?	Yes
<u>Other Adver</u> 11. Have adve	se Conditions you looked for ar rsely affect the sa	d found no adverse seismic conditions that could rety functions of the equipment?	Yes
Comments See Seismic Evaluated by	Qualification SQ-0	DC-V-16-0001 Rev 0 Mark S. Etre Date: 1 Mark S. Etre 1	0/26/2012
Photos			

**Oyster Creek Generating Station Unit 1** Correspondence No.: RS-13-065 Sheet 3 of 4

Status: Y N U

#### Seismic Walkdown Checklist (SWC)

Equipment ID No.: V-16-1

Equipment Class: (8) Motor-Operated and Solenoid-Operated Valves







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Oyster Creek Generating Station Unit 1 Correspondence No.: RS-13-065 Sheet 4 of 4

Seismic Walkdown Checklist (SWC)			U
Equipment ID No.:	V-16-1		
Equipment Class:	(8) Motor-Operated and Solenoid-Operated Valves		
Equipment Description:	CU INLET ISOLATION VALVE FROM REACTOR VESSEL		

Seismi	c Walkdown Checklist (SWC)								
	Equipment ID No.: V-1-106								
	Equipment Class: (0) Other								
	Equipment Description: MAIN STEAM LINE 'A' DRAIN VALVE								
	Project: Oyster Creek SWEL								
Locatio	n (Bldg, Elev, Room/Area): _ DW, 23.00 ft, 30								
	Manufacturer/Model:								
Instruc	tions for Completing Checklist								
This ch SWEL. finding:	ecklist may be used to document the results of the Seismic Walkdown of an item of e The space below each of the following questions may be used to record the results s. Additional space is provided at the end of this checklist for documenting other com	quipment on the of judgments and ments.							
Ancho		NI -							
1.	Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?	NO							
2.	Is the anchorage free of bent, broken, missing or loose hardware?	Not Applicable							
3.	Is the anchorage free of corrosion that is more than mild surface oxidation?	Not Applicable							
4.	Is the anchorage free of visible cracks in the concrete near the anchors?	Not Applicable							
5.	Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.)	Not Applicable							
6.	Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions?	Yes							
Seism	ic Walkdown C	hecklist (SV	VC)					Status: Y	'] N U
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	Equipment	ID No.: V-	1-106						
	Equipmen	t Class: (0)	Other	<u>, ,, , , , ,, ,</u>					
	Equipment Desc	cription: M/	AIN STEA	M LINE 'A' D					
Intera	ction Effects							·	
7.	Are soft targets	s free from ir	npact by	nearby equip	ment or struct	tures?			Yes
8.	Are overhead masonry block	equipment, c walls not lik	listribution ely to coll	n systems, ce lapse onto the	iling tiles and e equipment?	lighting, and	ł		Yes
9.	Do attached lir	nes have ade	equate fle	xibility to avo	id damage?				Yes
10.	Based on the a potentially adv	above seism verse seismic	ic interact	tion evaluatio on effects?	ns, is equipm	ent free of			Ye
<u>Other</u> 11.	Adverse Condi Have you look adversely affe	itions and for and fo ct the safety	ound no a functions	dverse seism of the equipr	ic conditions to nent?	that could			Yes
Comm ECR N	<u>ients</u> lumber OC 09-0	00484 002 M	odified thi	is motor oper	ated valve to	a manual val	ve.		
Evalua	ited by:	Man S	Elve	Mark S.	Etre	D	ate:	10/26/2012	
	<u> </u>	Son	B	Sett	n W. Baker			10/26/2012	

Seismic Walkdown Checklist	(SWC)			Status: Y N U
Equipment ID No.:	V-1-106			
Equipment Class:	(0) Other		n in the second s	
Equipment Description:	MAIN STEAM LINE 'A'	DRAIN VALVE	n na san ar an	
EFECTAL RETRICTE EFE	DOFESTION THE BSE STILL	IMG_4466		
A MARCE				
135-22				
and the second				
IMG_4465			101 	

Seismic Walkdown Checklist (SV	VC)	Status: Y N U
Equipment ID No.: V-	1-7	
Equipment Class: (7)	Fluid-Operated Valves	
Equipment Description: MA	AIN STEAM LINE'A' OUTLET ISOLATION VALVE(NS03-A)	)
Project:	Oyster Creek SWEL	
Location (Bldg, Elev, Room/Area):	DW, 23.00 ft, 30	
Manufacturer/Model:		
Instructions for Completing Chee	cklist	
This checklist may be used to docu SWEL. The space below each of the findings. Additional space is provide	ment the results of the Seismic Walkdown of an item of equilation the following questions may be used to record the results of led at the end of this checklist for documenting other comm	uipment on the judgments and ents.
<u>Anchorage</u>		
<ol> <li>Is anchorage configuration of SWEL items requiring su</li> </ol>	verification required (i.e., is the item one of the 50% uch verification)?	No
2. Is the anchorage free of be	ent, broken, missing or loose hardware?	Not Applicable
3. Is the anchorage free of co	prrosion that is more than mild surface oxidation?	Not Applicable
4. Is the anchorage free of vis	sible cracks in the concrete near the anchors?	Not Applicable
<ol> <li>Is the anchorage configura This question only applies configuration verification is</li> </ol>	tion consistent with plant documentation? (Note: if the item is one of the 50% for which an anchorage required.)	Not Applicable
<ol> <li>Based on the above anchor potentially adverse seismic</li> </ol>	prage evaluations, is the anchorage free of c conditions?	Yes

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Seismi	ic Walkdown Checklis	(SWC)	Status: Y N U
	Equipment ID No.	V-1-7	
	Equipment Class	(7) Fluid-Operated Valves	
	Equipment Description	MAIN STEAM LINE'A' OUTLET ISOLA	ATION VALVE(NS03-A)
nterac	tion Effects		······································
7.	Are soft targets free f	om impact by nearby equipment or struct	tures? Yes
	Nearby rack has ade	quate clearance to valve.	
8.	Are overhead equipm masonry block walls r <i>Overhead lines well</i>	ent, distribution systems, ceiling tiles and ot likely to collapse onto the equipment? supported	l lighting, and Yes
9.	Do attached lines hav	e adequate flexibility to avoid damage?	Yes
	Welded airlines into rupture of air is no iss	alve provide ductile flexibility. The valve le.	is failsafe, so
10.	Based on the above s potentially adverse se	eismic interaction evaluations, is equipments interaction effects?	ent free of Ye
Other	Adverse Conditions		
11.	Have you looked for a adversely affect the s	nd found no adverse seismic conditions f fety functions of the equipment?	that could Yes
<u>Soo S</u>	ients	OC V 1 0007 Pey 1	
/alve   start-u	packing is leaking. Per	perations this is being worked on during	the Outage and will be repaired prior to
Evalua	ited by:	S Ere Mark S. Etre	Date: 10/26/2012
		Bus	



# **Photos**









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Opin min Walladarum Obaabliat	Status: Y N	U
Seismic walkdown Checklist	(SWC)	
Equipment ID No.:	V-1-7	
Equipment Class:	(7) Fluid-Operated Valves	
Equipment Description:	MAIN STEAM LINE'A' OUTLET ISOLATION VALVE(NS03-A)	

Seismic Walkdown Checklist (SWC)	Status: Y N U
Equipment ID No.: RK-411-1	
Equipment Class: (18) Instruments on Racks	
Equipment Description: MSIV'S SOLENOID AIR VALVE & EQUIPMENT MOUNTIN	IG RACK
Project: Oyster Creek SWEL	
Location (Bldg, Elev, Room/Area): RB, 23.00 ft, 29	
Manufacturer/Model:	
Instructions for Completing Checklist	
This checklist may be used to document the results of the Seismic Walkdown of an item of e SWEL. The space below each of the following questions may be used to record the results findings. Additional space is provided at the end of this checklist for documenting other com	equipment on the of judgments and iments.
Anchorage	
<ol> <li>Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?</li> </ol>	No
2. Is the anchorage free of bent, broken, missing or loose hardware?	Yes
3. Is the anchorage free of corrosion that is more than mild surface oxidation?	Yes
4. Is the anchorage free of visible cracks in the concrete near the anchors?	Yes
<ol> <li>Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.)</li> </ol>	Not Applicable
6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions?	Yes

Soicm	via Walkdown Chaokliet		Status: Y N U
Jeian			
Intora	Equipment Description:	MSIV'S SOLENOID AIR VALVE & EQUIPM	
<u>intera</u> 7.	Are soft targets free fro	m impact by nearby equipment or structures?	? Yes
8.	Are overhead equipme	nt, distribution systems, ceiling tiles and lighti	ng, and Yes
0.	masonry block walls no	ot likely to collapse onto the equipment?	
9.	Do attached lines have	adequate flexibility to avoid damage?	Yes
10.	Based on the above se potentially adverse sei	eismic interaction evaluations, is equipment freesmic interaction effects?	ee of Yes
Other	Adverse Conditions		
11.	Have you looked for an adversely affect the sa	nd found no adverse seismic conditions that c fety functions of the equipment?	ould Yes
Comn	nents		
See S	eismic Qualification SQ-	DC-RK-411-001 Rev 0	
Gener discus installe Surfac Rack i	ral housekeeping concern ssions with operations all ed per the Oyster Creek ce oxidation present, but is adequately braced to v	ns regarding transient materials throughout ar of the housekeeping concerns will be resolve Scaffolding procedures and is Seismically res no apparent loss of cross section or strength. /all.	ea. No soft targets in the area. Per d prior to start–up. Scaffolding is trained.
Evolue	Man/	S Etto	Doto: 10/26/2012
	aieu by		

Status: Y N U Seismic Walkdown Checklist (SWC)						
Equipment ID No.:	RK-411-1	~				
Equipment Class:	(18) Instruments on Racks					
Equipment Description:	MSIV'S SOLENOID AIR VALVE & EQUIPMENT MOUNT	ING RACK				
So	Ber Seth W. Baker	10/26/2012				

**Photos** 





IMG\_4442





IMG\_4445



Seismic Walkdown Checklist (SWC)	Status: Y N U
Equipment ID No.: V-1-10	
Equipment Class: (7) Fluid-Operated Valves	
Equipment Description: MAIN STEAM LINE'B' OUTLET ISOLATION VALVE(NS04-	B)
Project: Oyster Creek SWEL	
Location (Bldg, Elev, Room/Area): RB, 23.00 ft, 29	
Manufacturer/Model:	
Instructions for Completing Checklist	
This checklist may be used to document the results of the Seismic Walkdown of an item of e SWEL. The space below each of the following questions may be used to record the results of findings. Additional space is provided at the end of this checklist for documenting other com	quipment on the of judgments and ments.
Anchorage	
<ol> <li>Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?</li> </ol>	No
2. Is the anchorage free of bent, broken, missing or loose hardware?	Not Applicable
3. Is the anchorage free of corrosion that is more than mild surface oxidation?	Not Applicable
4. Is the anchorage free of visible cracks in the concrete near the anchors?	Not Applicable
<ol> <li>Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.)</li> </ol>	Not Applicable
6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions?	Yes

Seism	ic Walkdown Checklist	(SWC)		Status: Y N U
	Equipment ID No.:	V-1-10		
	Equipment Class:	(7) Fluid-Operated Valves		
	Equipment Description:	MAIN STEAM LINE'B' OUTLET ISOLATION VA	LVE(NS	504-В)
Intera	ction Effects			
7.	Are soft targets free fro	m impact by nearby equipment or structures?		Yes
8.	Are overhead equipme masonry block walls no	nt, distribution systems, ceiling tiles and lighting, a t likely to collapse onto the equipment?	and	Yes
9.	Do attached lines have	adequate flexibility to avoid damage?		Yes
10.	Based on the above se potentially adverse seis	ismic interaction evaluations, is equipment free or smic interaction effects?	f	Yes
Other	Adverse Conditions	d found no adverse seismic conditions that could		Yes
	adversely affect the sa	ety functions of the equipment?		
Comm See Se Genera discus installe	nents eismic Qualification SQ-( al housekeeping concerr sions with operations all ed per the Oyster Creek	DC-V-1-0010 Rev 1 s regarding transient materials throughout area. I of the housekeeping concerns will be resolved pri Scaffolding procedures and is Seismically restrain	No soft f ior to sta	targets in the area. Per art–up. Scaffolding is
Evalua	Manf	S Ever Mark S. Etre	Date:	10/26/2012
	So	Ren Seth W. Baker		10/26/2012

Status: Y N L						
Equipment ID No.:	V-1-10	۳. ۲.				
Equipment Class:	(7) Fluid-Operated Valves					
Equipment Description:	MAIN STEAM LINE'B' OUTLET ISOLATION VALVE(NS04-E	3)				

# **Photos**



IMG\_4450



IMG\_4452

IMG\_4453

IMG\_4451





IMG\_4454



	Status: Y N U
Seismic Walkdown Checklist (SWC)	
Equipment ID No.: 1A21-460V	
Equipment Class: (1) Motor Control Centers	
Equipment Description: MCC 1A21 460V,3PH,3W,60HZ FOR TURBINE BUILDING	
Project: Oyster Creek SWEL	
Location (Bldg, Elev, Room/Area):RB, 23.00 ft, 09	
Manufacturer/Model:	
Instructions for Completing Checklist	
This checklist may be used to document the results of the Seismic Walkdown of an item of e SWEL. The space below each of the following questions may be used to record the results of findings. Additional space is provided at the end of this checklist for documenting other compared to the space of the spa	quipment on the of judgments and ments
Anchorage	
<ol> <li>Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?</li> </ol>	Yes
2. Is the anchorage free of bent, broken, missing or loose hardware?	Yes
3. Is the anchorage free of corrosion that is more than mild surface oxidation?	Yes
4. Is the anchorage free of visible cracks in the concrete near the anchors?	Yes
5. Is the anchorage configuration consistent with plant documentation? (Note:	Yes
This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.)	
<ol> <li>Based on the above anchorage evaluations, is the anchorage free of notentially adverse seismic conditions?</li> </ol>	Yes

\_

Seism	ic Walkdown Checklist	(SWC)	
	Equipment ID No.:	1A21-460V	
	Equipment Class:	(1) Motor Control Centers	
	Equipment Description:	MCC 1A21 460V,3PH,3W,60HZ FOI	R TURBINE BUILDING
Intera	ction Effects		
7.	Are soft targets free fro	m impact by nearby equipment or stru	ictures? Yes
8.	Are overhead equipme masonry block walls no	nt, distribution systems, ceiling tiles ar t likely to collapse onto the equipment	nd lighting, and Yes t?
9.	Do attached lines have	adequate flexibility to avoid damage?	Ye
10.	Based on the above se potentially adverse seis	ismic interaction evaluations, is equip mic interaction effects?	ment free of Ye
<u>Dther</u>	Adverse Conditions	d found no advorce sejemic condition	s that could Vo
	adversely affect the saf Performed internal ins The lower and side par There were no issues f that the areas in the bu Adverse Conditions are	et journal no adverse seisinic conditions iety functions of the equipment? spection and did not find any Other Ad pels were opened. The Breakers were ound in the areas opened. There is no ckets pose an issue and the intent of a satisfied.	verse Conditions. not removed. o reason to believe reviewing Other
Comm	nents		
See Se	eismic Qualification SQ-0	0C-1A21-460V-MCC Rev 0	
Suppo	rts are consistent with Dr	awing 3E-153-38-016 Rev 0	
Calcula NRC II	ation C-1302X-322C-A06 E Bulletin 80-11.	qualifies the Oyster Creek safety-rela	ated masonry walls for seismic to address
	m	1 PST	

Equ	uipment ID No.:	1A21-460V		
Eq	uipment Class:	(1) Motor Co	ntrol Centers	na 20 kon u anna 20 kon 1999 - 2009 - 2019 - 2019 - 2019 - 2019 - 2019 - 2019 - 2019 - 2019 - 2019 - 2019 - 201 - 2019 - 2019 - 2019 - 2019 - 2019 - 2019 - 2019 - 2019 - 2019 - 2019 - 2019 - 2019 - 2019 - 2019 - 2019 - 2019
Equipment Description:		MCC 1A21 460V,3PH,3W,60HZ FOR TURBINE BUILDING		
	So	TBu	Seth W. Baker	10/26/2012
Photos				





IMG\_0942





Seismic Walkdown Checklist	(SWC) Status: Y N U
Equipment ID No.:	1A21-460V
Equipment Class:	(1) Motor Control Centers
Equipment Description:	MCC 1A21 460V,3PH,3W,60HZ FOR TURBINE BUILDING
IMG_4511	IMG_4512



IMG\_4513

SQUG SEWS

	Equipment ID No.:	1A21-460V			
	Equipment Class:	(1) Motor Control Ce	enters		
Equ	ipment Description:	MCC 1A21 460V,3F	PH,3W,60HZ FOR TU	RBINE BUILDING	i
	EBASCO SERVICES INCOM		E8/	4SCO	
D	THO HOLD HADE CENTER, NEW YOR, N.T.	0048			
		April 29,	1981		
	GPU Services Incorpo Attention: Mr. Leon	rated Garibian			
	100 Interpace Parkwa Parsippany, NJ 0705	у 4			
	Dear Leon:				
	Re: OYSTER CREEK NU FINAL SUBMITTAL BVALUATION CALC	CLEAR STATION OF MASONRY WALL ULATION BOOKS			
	I am sending to you, books and ll volumes involvement for the Walls as required by	together with this letter of computer output. Thi re-evaluation of the Safe NRC IE Bulletin 80-11.	,20 volumes of calculations s will mark the end of ou: ty-Related Concrete Mason	a cy	
	Should you have any please do not hestit	ucstions regarding the c ate to call. We will be	alculations and sketches, glad to help.		
		Very truly	yours,		
		6 S.	der by an		
		E Udar Assistant (	Chief Civil Engineer		
	GW:d1				
	G Wu				

Seismic Walkdown Checklist (SWC)	Status: Y N U
Equipment ID No.: 1A21B-460V	
Equipment Class: (1) Motor Control Centers	
Equipment Description: MCC 1A21B 460V,3P,3W,	60HZ FOR REACTOR BUILDING
Project: Oyster Creek SWEL	
Location (Bldg, Elev, Room/Area): RB, 23.00 ft, 07	
Manufacturer/Model:	
Instructions for Completing Checklist	
This checklist may be used to document the results of the S SWEL. The space below each of the following questions m findings. Additional space is provided at the end of this che	eismic Walkdown of an item of equipment on the ay be used to record the results of judgments and cklist for documenting other comments.
<u>Anchorage</u>	
<ol> <li>Is anchorage configuration verification required (i.e. of SWEL items requiring such verification)?</li> </ol>	, is the item one of the 50% Yes
2. Is the anchorage free of bent, broken, missing or lo	ose hardware? Yes
3. Is the anchorage free of corrosion that is more than	mild surface oxidation? Yes
4. Is the anchorage free of visible cracks in the concre	ete near the anchors? Yes
<ol> <li>Is the anchorage configuration consistent with plant This question only applies if the item is one of the 5 configuration verification is required.)</li> </ol>	documentation? (Note: Yes 0% for which an anchorage
6. Based on the above anchorage evaluations, is the a potentially adverse seismic conditions?	anchorage free of Yes

Seism	ic Walkdown Checklist	t (SWC)		
	Equipment ID No.:	1A21B-460V		
	Equipment Class:	(1) Motor Control Centers		
	Equipment Description:	MCC 1A21B 460V,3P,3W,60HZ FO	R REACTOR BUILDING	3
nterad	ction Effects			
7.	Are soft targets free fro	om impact by nearby equipment or str	uctures?	Yes
8.	Are overhead equipme masonry block walls no	ent, distribution systems, ceiling tiles a ot likely to collapse onto the equipmer	nd lighting, and nt?	Ye
9.	Do attached lines have	e adequate flexibility to avoid damage	?	Ye
10.	Based on the above se potentially adverse sei	eismic interaction evaluations, is equip smic interaction effects?	oment free of	Ye
Other	Adverse Conditions			
11.	Have you looked for an adversely affect the sa Performed internal in The lower and side par There were no issues that the areas in the bu Adverse Conditions and	nd found no adverse seismic condition fety functions of the equipment? spection and did not find any Other Ad nels were opened. The Breakers were found in the areas opened. There is no ickets pose an issue and the intent of e satisfied.	ns that could dverse Conditions. e not removed. o reason to believe i reviewing Other	Ye
Comm	nents			
See Se	eismic Qualification SQ-	OC-1A21B-460V-MCC Rev 0		
Suppo	rts are consistent with C	alculation C-1302-732-5320-014 Rev	0	
	s approximately 3" from	large square column, the relative stiffr	ness of the MCC is in the	e strong direction, i
MCC is s unlik	kely to impact the column	ı.	· · · · · · · · · · · · · · · · · · ·	

	Status: Y N U
Seismic Walkdown Checklist (SWC)	
Equipment ID No.: 1A21B-460V	
Equipment Class: (1) Motor Control Center	rs
Equipment Description: MCC 1A21B 460V,3P,3	W,60HZ FOR REACTOR BUILDING
Sun Bur se	th W. Baker 10/26/2012
<image/>	
IMG_0967	IMG_4524



AC-49



		Status:	Y	Ν	U
eismic Walkdown Checklist	(SWC)				
Equipment ID No.:	1A21B-460V				
Equipment Class:	(1) Motor Control Centers				
Equipment Description:	MCC 1A21B 460V.3P.3W.60HZ FOR REACTOR BUILDING				

•

Seismic Walkdown Checklist (SWC)	Status: Y N U
Equipment ID No.: 1A23-460V	
Equipment Class: (1) Motor Control Centers	
Equipment Description: MCC 1A23 460V,3PH,3W,60HZ FOR REACTOR BUI	LDING
Project: Oyster Creek SWEL	
Location (Bldg, Elev, Room/Area): RB, 23.00 ft, 09	
Manufacturer/Model:	
Instructions for Completing Checklist	
This checklist may be used to document the results of the Seismic Walkdown of an iter SWEL. The space below each of the following questions may be used to record the re findings. Additional space is provided at the end of this checklist for documenting othe	m of equipment on the sults of judgments and or comments.
Anchorage	
<ol> <li>Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?</li> </ol>	6 Yes
2. Is the anchorage free of bent, broken, missing or loose hardware?	Yes
3. Is the anchorage free of corrosion that is more than mild surface oxidation?	Yes
4. Is the anchorage free of visible cracks in the concrete near the anchors?	Yes
<ol> <li>Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.)</li> </ol>	Yes
6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions?	Yes

Salamia Walkdown Chaeklint		Status: Y N U
Fauinment ID No :	1823-460\/	
Equipment Class:	(1) Motor Control Centers	
Equipment Description:	MCC 1A23 460V 3PH 3W 60HZ FOR REACTOR BL	
Interaction Effects		
7. Are soft targets free fro	m impact by nearby equipment or structures?	Yes
<ol> <li>Are overhead equipme masonry block walls no</li> </ol>	nt, distribution systems, ceiling tiles and lighting, and t likely to collapse onto the equipment?	Yes
9. Do attached lines have	adequate flexibility to avoid damage?	Yes
10. Based on the above se potentially adverse seis	ismic interaction evaluations, is equipment free of smic interaction effects?	Yes
Other Adverse Conditions		
11. Have you looked for an adversely affect the sa Performed internal ins The lower and side part There were no issues that the areas in the buck Adverse Conditions are adversed.	Id found no adverse seismic conditions that could fety functions of the equipment? spection and did not find any Other Adverse Condition hels were opened. The Breakers were not removed. found in the areas opened. There is no reason to belie tokets pose an issue and the intent of reviewing Other a satisfied.	Yes s. ve
<u>Comments</u>		
See Seismic Qualification SQ-(	DC-1A23-460V-MCC Rev 1	
Upper supports are consistent	with Drawing 3E-153-38-016 Rev 0	
Calculation C-1302X-322C-A00 NRC IE Bulletin 80-11.	S qualifies the Oyster Creek safety-related masonry wa	alls for seismic to address
Evaluated by:	A Chur Mark S. Etre Da	te: 10/26/2012

Seismic Walkdown Checklist (SWC)		Status: Y N U
Equipment ID No : 1A23-46	60V	
Equipment ID No. 120-4	or Control Centers	
Equipment Description: MCC 14	A23 460V 3PH 3W 60HZ FOR REACTOR BUILDIN	NG
Sint	Seth W. Baker1	10/26/2012
<section-header></section-header>	<image/>	
IMG_0952	IMG_0955	





Seismic Walkdown Checklist (SWC)

Equipment Class:       (1) Motor Control Centers         Equipment Description:       MCC 1A23 460V,3PH,3W,60HZ FOR REACTOR BUILDING		Equipment ID No.: 1A23-460V	
	<b>)</b>	Equipment Class: (1) Motor Control Center	
	,60HZ FOR REACTOR BUILDING	oment Description: MCC 1A23 460V,3PH,3	NING

IMG\_4521 SQUG SEWS

Seismic Walkdown Checklist	(SWC)	Status: Y N U
Equipment ID No.:	1A23-460V	
Equipment Class:	(1) Motor Control Centers	
Equipment Description:	MCC 1A23 460V,3PH,3W,60HZ FOR REACTO	R BUILDING
EBASCO SERVICES INCOR	PORATED	)
Timo (Horig) frago Center Argar York, ALY 10	40×/1 20	-
	*pe11 29, 1961	
GPU Services lacorpoz Attention: Nr. Leon O 100 Interpace Parkway Porsippany, NJ 07054	ared aribian	
Dear Leon:		
RG: OYSTER CREEK NUC PINAL SURVITIAL EVALUATION CALCU	LEAR STATION DF FASONRY MALL ATION BOOKS	
1 an sending to you, t hooks and 11 volumes involvement for the r Walls as required by h	ngether with this letter,20 volumes of calculation of computer output. This will mark the end of our e-evaluation of the Safety-Related Concrete Masonry RC IE Bulletin 80-11.	
Should you have any qu please do not hestitad	estions regarding the calculations and skatches, a to call. We will be glad to help.	
	Vary truly yours,	
	S. S. Char . by sur	
	E Odar Assistant Chiof Civil Engineer	
GH:d1		
cc: K.D.Chśu. G.Wa		
0		
<b>9</b> 00 000 -		I
C1302X322CA06 VOL 1, 198104	27,	
REEVALUATION OF CONCRET	E MASONRY WALL	
NKU IE BULLETIN 80-11 GENE		

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Sta Seismic Walkdown Checklist (SWC)	tus: Y N U
Equipment ID No.: 1A2-460V	
Equipment Class: (2) Low Voltage Switchgear	
Equipment Description: 460V UNIT SUBSTATION 1A2 FOR REACTOR BUILDING	
Project: Oyster Creek SWEL	
Location (Bldg, Elev, Room/Area): RB, 23.00 ft, 11	
Manufacturer/Model:	
Instructions for Completing Checklist	
This checklist may be used to document the results of the Seismic Walkdown of an item of equip SWEL. The space below each of the following questions may be used to record the results of jud findings. Additional space is provided at the end of this checklist for documenting other commen	ment on the dgments and ts.
Anchorage	
<ol> <li>Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?</li> </ol>	Yes
2. Is the anchorage free of bent, broken, missing or loose hardware?	Yes
3. Is the anchorage free of corrosion that is more than mild surface oxidation?	Yes
4. Is the anchorage free of visible cracks in the concrete near the anchors?	Yes
<ol> <li>Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.)</li> </ol>	Yes
6. Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions?	Yes

Seism	ic Walkdown Checklist (SWC)	Status: Y N U
	Equipment ID No.: 1A2-460V	
	Equipment Class: (2) Low Voltage Switchgear	····· ································
	Equipment Description: 460V UNIT SUBSTATION 1A2 FOR REACTOR BUILD	DING
Intera	ction Effects	a a gray a Million and an a same
7.	Are soft targets free from impact by nearby equipment or structures?	Yes
8.	Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment?	Yes
9.	Do attached lines have adequate flexibility to avoid damage?	Yes
10.	Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects?	Yes
<u>Other</u>	Adverse Conditions	
11.	Have you looked for and found no adverse seismic conditions that could adversely affect the safety functions of the equipment? Partial Inspection opened one panel, however, could see approximately 1/3 of the total internals. The Breakers were not removed. There were no issues found in the areas opened. The internal inspections were verified for at least 1/3 of the space that could be seen with the door open.	Yes
	Therefore, the intent of no other adverse conditions is met. The other panels would not be opened by ops due to the fact that, this is always energized.	
Comn Nearb masor betwee See S	nents y masonry block Wall is braced. Calculation C-1302X-322C-A06 qualifies the Oys mry walls for seismic to address NRC IE Bulletin 80-11. The walls are modified wit en large angle brace and wall is ½" will still confine the wall. eismic Qualification SQ-OC-1A2-460V-USS Rev 2	ster Creek safety-related th bracing. Gap
One si opene open.	ide panel was opened. The Breakers were not removed. There were no issues for d. The internal Anchor Bolts were verified for at least 1/3 of the space that could There is no reason to believe that the other anchors pose an issue and the intent	und in the areas be seen with the door of reviewing anchorage

Saismic Walkdown Chacklist	(SWC)	Status: Y N U
Equipment ID No.:	1A2-460V	
Equipment Class:	(2) Low Voltage Switchgear	
is satisfied.	460V UNIT SUBSTATION 1A2 FOR REACTOR BUI	LDING
Calculation C-1302X-322C-A06 NRC IE Bulletin 80-11.	o qualifies the Oyster Creek safety-related masonry wa	alls for seismic to address
Evaluated by:	Mark S. Etre Dat	e: 10/26/2012
36	Seth W. Baker	10/26/2012
Photos		
IMG_0847	IMG_0849	
IMG_0850	Img_0853	




eismic Walkdown Checklist	(SWC)			Status: Y N U
Equipment ID No.:	1A2-460V			
Equipment Class:	(2) Low Voltage S	witchgear		
Equipment Description:	460V UNIT SUBS	TATION 1A2 FOR	R REACTOR BUILDI	NG
EBASCO SERVICES INCORP	MAATED		E848007	
	Apr11 29	9, 1961		
GPU Services Lacorpor Atcention: Nr. Leca G 100 Interpace Parkway Parsippany, MJ 07054	acod ar ib Ian			
Dear Leon:				
Re: OYSTER CREEK NUCL PRIAL SUPMITTAL C EVALUATION CALCUI	LEAR STATION DP PASONRY NALL ATION BOOKS			
I an sending to you, to books and il volumes o involvement for the re Wells as required by M	gether with this lect. of computer output. The cvaluation of the Sa RC IE Bulletin 80-11.	er,20 volumes of cal his will mark the en fety-Related Concret	cula <b>tion</b> id of our ie Hasonry	
Should you have any qu please do not hestitat	estions regarding the e to call. We will be	calculations and sk glad to help.	otches,	
	Very trul	y yours,		
	E Odar Atsistant	Chine Church Barris		
GW: d1		Surfr orvit angings	e <b>r</b>	
ce: K D Chán G Wu				*
Ð			{	
			1	
C1302X322CA06 VOL 1, 1981 REEVALUATION OF CONCRE	0427, ETE MASONRY WA	<b>NLL</b>		

Seism	nic Walkdown Checklist (SWC)	
	Equipment ID No.: 1C	
	Equipment Class: (3) Medium Voltage Switchgear	
	Equipment Description: 4160V BUS 1C SWITCHGEAR	
	Project: Oyster Creek SWEL	
Locati	ion (Bldg, Elev, Room/Area): TB, 23.00 ft, 28	
	Manufacturer/Model:	
Instru	ictions for Completing Checklist	
This c SWEL finding	checklist may be used to document the results of the Seismic Walkdown of an item of ed The space below each of the following questions may be used to record the results o gs. Additional space is provided at the end of this checklist for documenting other comr	quipment on the f judgments and nents.
Anche	orage	
1.	Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?	Yes
2.	Is the anchorage free of bent, broken, missing or loose hardware?	Yes
3.	Is the anchorage free of corrosion that is more than mild surface oxidation?	Yes
4.	Is the anchorage free of visible cracks in the concrete near the anchors?	Yes
5.	Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.)	Yes
6.	Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions?	Yes

Seismic Walkdown Chacklist (SWC)	Status: Y N U
Equipment ID No. 10	
Equipment Class: (3) Medium Voltage Switchgear	
Interaction Effects	
7. Are soft targets free from impact by nearby equipment or structures?	Yes
8. Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment?	Yes
9. Do attached lines have adequate flexibility to avoid damage?	Yes
10. Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects?	Yes
Other Adverse Conditions	
11. Have you looked for and found no adverse seismic conditions that could adversely affect the safety functions of the equipment? Internal inspections have been performed and no other adverse conditions have been found.	Yes
Comments	
See SQ-OC-1C-4160V Rev 03	
Anchorage within cabinet has been inspected.	
Anchor for breaker guide rails on floor is missing nut inside cubicle 1A1P. The guide rails cabinet frame and serve no structural purpose. Therefore there is no seismic issue.	are not part of the
Evaluated by: Mark S. Etre Date:	10/26/2012
Sun Ber Seth W. Baker	10/26/2012

Seismic Walkdown Checklist	(SWC)		Status: Y N U
Equipment ID No .:	1C		sara Sara Ny tanàna mampikambana mandritra dia kaominina dia kaominina dia kaominina dia kaominina dia kaominina dia kaomini
Equipment Class:	(3) Medium Voltage Sv	vitchgear	
Equipment Description:	4160V BUS 1C SWITC	HGEAR	
Photos	s Alexandre de la <u>1997 de la constante de la cons</u> a constante de la constante de		
IMG_1091		IMG_1092	
			•
IMG_1093		IMG_1094	









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eismic Walkdown Checklist (SWC) Equipment ID No.: 1C Equipment Class: (3) Medium Voltage Switchgear Equipment Description: 4160V BUS 1C SWITCHGEAR		Status: Y N L
Equipment ID No.       1C         Equipment Class:       (3) Medium Voltage Switchgear         Equipment Description:       4160V BUS 1C SWITCHGEAR             Image: Arrow and arrow	eismic Walkdown Checklist	(SWC)
<text></text>	Equipment ID No .:	1C
<text></text>	Equipment Class:	(3) Medium Voltage Switchgear
<image/>	Equipment Description:	4160V BUS 1C SWITCHGEAR
IMG_4555	MG_4554	
IMG_4555		
		IMG_4555
	1	

-4-6-0000	1C			
Equipment Class:	(3) Medium Voltage Switchgear	n n Nationalista La constantina	r B <sup>ar</sup> Dir Start de Cardanan - an Start	
Equipment Description:	4160V BUS 1C SWITCHGEAR			
IMG_4556		42 <sup>10</sup>	11 11,20	

Seismi	ic Walkdown Checklist	(SWC) SUPPLEMENTAL CABINET INSPECTION	Status: Y N U
	Equipment ID No.:	BTCHG C1 (SEE APPENDIX C PAGE C-37 )	
	Equipment Class:	(16) Inverters	
	Equipment Description:	'C' STATION BATTERY SOLID STATE STATIC CHARGE	ER C1
	Proje	ct: Oyster Creek SWEL	
Locatio	on (Bldg, Elev, Room/Are	a): TB, 23.00 ft, 26	
	Manufacturer/Mod	el:	
Instru	ctions for Completing C	hecklist	<u> </u>
This ch SWEL finding	necklist may be used to d The space below each s. Additional space is pro	ocument the results of the Seismic Walkdown of an item of of the following questions may be used to record the results ovided at the end of this checklist for documenting other co	equipment on the s of judgments and mments.
<u>– 1</u> .	Is anchorage configurat	tion verification required (i.e., is the item one of the 50%	Yes
••	of SWEL items requirin	g such verification)?	
2.	Is the anchorage free o	f bent, broken, missing or loose hardware?	Yes
3.	Is the anchorage free o	f corrosion that is more than mild surface oxidation?	Yes
4.	Is the anchorage free o	f visible cracks in the concrete near the anchors?	Yes
5.	Is the anchorage config This question only appl configuration verificatio	uration consistent with plant documentation? (Note: ies if the item is one of the 50% for which an anchorage n is required.)	Yes
6.	Based on the above an potentially adverse seis	chorage evaluations, is the anchorage free of mic conditions?	Yes
	SEE SWC IN APPEND	IX C FOR RESPONSES	
<u>Interac</u>	ction Effects		
7.	Are soft targets free fro	m impact by nearby equipment or structures?	Yes
8.	Are overhead equipme masonry block walls no	nt, distribution systems, ceiling tiles and lighting, and t likely to collapse onto the equipment?	Yes
9.	Do attached lines have	adequate flexibility to avoid damage?	Yes
10.	Based on the above se potentially adverse seis	ismic interaction evaluations, is equipment free of mic interaction effects?	Yes
	SEE SWC IN APPEND	IX C FOR RESPONSES	

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Seismic Walkdo	wn Checklist	(SWC) SUPPLEM	ENTAL CABINET INS	PECTION	Status: Y N U
Equip	ment ID No.:	BTCHG C1 (SEE	APPENDIX C PAGE (	C-37)	
Equi	pment Class:	(16) Inverters			
Equipmen	t Description:	'C' STATION BAT	TERY SOLID STATE	STATIC CHARGI	ER C1
	-				
Other Adverse (	Conditions (S	UPPLEMENTAL C	ABINET INSPECTION	<u>1)</u>	
adversel	affect the saf	a toung no adverse etv functions of the	e seismic conditions the equipment?	at could	
a. I	nternal compo	nents secured? (i.e	e. no loose or missing f	asteners)	Yes*
b. A	Are adjacent c	abinets secured tog	gether?		N/A
с. І	No other adver	se seismic conditio	ons?		Yes*
nternal inspection	s have been p	erformed and no o	ther adverse conditions	s have been foun	d.
<u>Comments</u>					
See SQ-OC-BT C	HG C1 & C2 F	ev 00			
Equipment has	<u>External</u> an	chorage.			
<u>Comments</u>		<b></b>			
See SQ-OC-B1	CHG C1 & C2	Rev 00			
External Anchora	ige was compl	eted during online	walk down.		
Evaluated by:	Man	S End	Mark S. Etre	Date:	8/22/2012 & 12/10/12* *for Internals inspection.
	So	<del>n Bu</del> n	Seth W. Baker	Date:	8/22/2012
	WMG7	40	Wing Ho	Date:	12/10/12 for Internals inspection Only.
Photos		, , , , , , , , , , , , , , , , , , ,	'n		- <u>-</u> ,



AC-74

				Statu	
Seis	mic Walkdown Checklist	(SWC) SUPPLEMENT	AL CABINET INSPEC	TION	
	Equipment ID No.:	BTCHG C1 (SEE APP	PENDIX C PAGE C-37	)	
	Equipment Class:	(16) Inverters			
	Equipment Description:	'C' STATION BATTER	RY SOLID STATE STA	TIC CHARGER C1	
IMG_	_1506				
			in and a second s		
					AO 75
					AU-75

Soismi	c Walkdown Checklist (SWC) S		YNU
Geiðini	Equipment ID No.: DG-1 B	ATTERY CHARGER (SEE APPENDIX C PAGE C- 75)	
	Equipment Class: (16) Inve	erters	
	Equipment Description: DIESEL	GENERATOR LINIT #1 BATTERY CHARGER	
	Project: Ove	tor Crock SWEI	
Locatio	n (Bida Eloy Boom/Aroa): DG		
LUCALIO	Monufacturar(Modal:		<u> </u>
Instruc	tions for Completing Checklist		
This ch SWEL. findings	ecklist may be used to document The space below each of the foll 5. Additional space is provided at	the results of the Seismic Walkdown of an item of equipment of lowing questions may be used to record the results of judgment the end of this checklist for documenting other comments.	on the its and
Ancho	rage		
1.	Is anchorage configuration verifie of SWFL items requiring such ve	cation required (i.e., is the item one of the 50% erification)?	-
2.	Is the anchorage free of bent, br	oken, missing or loose hardware?	-
3.	Is the anchorage free of corrosio	on that is more than mild surface oxidation?	-
4.	Is the anchorage free of visible of	racks in the concrete near the anchors?	-
5. 6.	Is the anchorage configuration of This question only applies if the configuration verification is requi Based on the above anchorage potentially adverse seismic cond	onsistent with plant documentation? (Note: item is one of the 50% for which an anchorage ired.) evaluations, is the anchorage free of litions?	-
	SEE SWC IN APPENDIX C FOR	<u>RESPONSES</u>	
Interac	tion Effects		<u></u>
7.	Are soft targets free from impact	by nearby equipment or structures?	-
8.	Are overhead equipment, distrib masonry block walls not likely to	ution systems, ceiling tiles and lighting, and collapse onto the equipment?	-
9.	Do attached lines have adequate	e flexibility to avoid damage?	-
10.	Based on the above seismic interpotentially adverse seismic inter	eraction evaluations, is equipment free of action effects?	-
-	SEE SWC IN APPENDIX C FOI	<u>R RESPONSES</u>	

Seismic Walko	down Checklist	(SWC) SUPF	PLEMENTAL CABIN	ET INSPECTION	Stat	us: Y N	U
Equ	uipment ID No.:	DG-1 BATT	ERY CHARGER (SE	E APPENDIX C PAG	E C- 75)		
Eq	uipment Class:	(16) Inverter	rs				
Equipment Description:		DIESEL GE	NERATOR UNIT #1	BATTERY CHARGE	R		
Other Adverse	e Conditions (S	UPPLEMENT	AL CABINET INSPI	ECTION)			
11. Have y	ou looked for an	nd found no ad	dverse seismic condi	tions that could			e.
advers	ely affect the sa	fety functions	of the equipment?	÷. v		jin m	
а.	Internal compo	onents secure	d? (i.e. no loose or n	issing fasteners)		Yes	
b.	Are adjacent c	abinets secur	ed together?			N/A	
C.	No other adver	rse seismic co	onditions?			Yes	
. (Cover Panel r See SQ-OC-M-3 Equipment has e	emoved) have b 39-001 Rev 06 external anchora	een performe age.	d and no other adver	se conditions have b	een found.	90 - 82 20	
	n Na na star na falsa da Galacinaj					ni Tanan yang kanalan dan dari dari dari	
Evaluated by:	Man	S End	Mark S. Etre	Date	: 10/26/2	012	
	So	nBe	Seth W. Bal	ker	10/26/2	012	

**Photos** 







IMG\_1185

### Status: N U Y Seismic Walkdown Checklist (SWC) SUPPLEMENTAL CABINET INSPECTION Equipment ID No.: DG-1 BATTERY CHARGER (SEE APPENDIX C PAGE C- 75) Equipment Class: (16) Inverters Equipment Description: DIESEL GENERATOR UNIT #1 BATTERY CHARGER IMG\_1186 IMG\_1369

Seismic	Status: Y N
	Equipment ID No.: DG-1 SWGR (SEE APPENDIX C PAGE C-78)
	Equipment Class: (20) Instrumentation and Control Panels and Cabinets
E	quipment Description: DIESEL GENERATOR #1 UNIT SWITCHGEAR
	Project: Oyster Creek SWEL
Locatior	(Bldg, Elev, Room/Area): DG BLDG, 23.00 ft, 01
	Manufacturer/Model:
Instruct	ions for Completing Checklist
This che SWEL. findings	ecklist may be used to document the results of the Seismic Walkdown of an item of equipment on the The space below each of the following questions may be used to record the results of judgments and Additional space is provided at the end of this checklist for documenting other comments.
Ancho	rage
1.	Is anchorage configuration verification required (i.e., is the item one of the 50% of SWEL items requiring such verification)?
2.	Is the anchorage free of bent, broken, missing or loose hardware?
3.	Is the anchorage free of corrosion that is more than mild surface oxidation?
<b>4</b> .	Is the anchorage free of visible cracks in the concrete near the anchors?
5.	Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage
6.	configuration verification is required.) Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions?
	SEE SWC IN APPENDIX C FOR RESPONSES
Interac	ction Effects
7.	Are soft targets free from impact by nearby equipment or structures?
8.	Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment?
9.	Do attached lines have adequate flexibility to avoid damage?
10.	Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects?

Seismic Walkdown Checklist	(SWC) SUPPLEMENTAL CABINET INSPECTION	Status: Y N U
Equipment ID No.:	DG-1 SWGR (SEE APPENDIX C PAGE C-78)	
Equipment Class:	(20) Instrumentation and Control Panels and Cabinets	
Equipment Description:	DIESEL GENERATOR #1 UNIT SWITCHGEAR	
Other Adverse Conditions (S	SUPPLEMENTAL CABINET INSPECTION)	
11. Have you looked for a	nd found no adverse seismic conditions that could	
adversely affect the sa	afety functions of the equipment?	N
a. Internal compo	onents secured? (i.e. no loose or missing fasteners)	Yes
c. No other adve	erse seismic conditions?	Yes
Comments		an a
Equipment has internal and exte	ernal anchorage.	
na na sina di Pana di Cana di La Cana da na sina di Pana. Na si Na si		
Mark	1 & Ent	
Evaluated by:	Mark S. Etre Date: 10/	26/2012
Se	mBur Seth W. Baker 10/	26/2012
Photos		









IMG\_1363

IMG\_1364

Seismic Walkdown Checklist	Status: Y N U (SWC) SUPPLEMENTAL CABINET INSPECTION
Equipment ID No.:	DG-1 SWGR (SEE APPENDIX C PAGE C-78)
Equipment Class:	(20) Instrumentation and Control Panels and Cabinets
Equipment Description:	DIESEL GENERATOR #1 UNIT SWITCHGEAR

IMG\_1365

IMG\_1366

# Seismic Walkdown Checklist (SWC) SUPPLEMENTAL CABINET INSPECTION Status: Y N U Equipment ID No.: DG-1 SWGR (SEE APPENDIX C PAGE C-78) Equipment Class: (20) Instrumentation and Control Panels and Cabinets Equipment Description: DIESEL GENERATOR #1 UNIT SWITCHGEAR







IMG\_1368

	Equipment ID No.:	ER18A (SEE APPENDIX C PAGE C-87)
	Equipment Class: (	20) Instrumentation and Control Panels and Cabinets
	Equipment Description: (	CORE SPRAY/AUTO DEPRESS'N SYSTEM RELAY LOGIC PANEL
	Project	C Oyster Creek SWEL
ocatio	on (Bldg, Elev, Room/Area)	: RB, 23.00 ft, 12
	Manufacturer/Mode	:
nstru	ctions for Completing Ch	ecklist
his ch WEL nding	necklist may be used to doo . The space below each of s. Additional space is prov	cument the results of the Seismic Walkdown of an item of equipment on the the following questions may be used to record the results of judgments and rided at the end of this checklist for documenting other comments.
1.	Is anchorage configuration	n verification required (i.e., is the item one of the 50%
••	of SWEL items requiring	such verification)?
2.	Is the anchorage free of t	pent, broken, missing or loose hardware?
3.	Is the anchorage free of o	corrosion that is more than mild surface oxidation?
4.	Is the anchorage free of v	visible cracks in the concrete near the anchors?
5. 6.	Is the anchorage configure This question only applies configuration verification Based on the above anch potentially adverse seism	ation consistent with plant documentation? (Note: s if the item is one of the 50% for which an anchorage is required.) norage evaluations, is the anchorage free of nic conditions?
	SEE SWC IN APPENDIX	C FOR RESPONSES
nterad	ction Effects	
7.	Are soft targets free from	impact by nearby equipment or structures?
8.	Are overhead equipment masonry block walls not l	distribution systems, ceiling tiles and lighting, and ikely to collapse onto the equipment?
9.	Do attached lines have a	dequate flexibility to avoid damage?
10.	Based on the above seise potentially adverse seise	mic interaction evaluations, is equipment free of ic interaction effects?
	SEE SWC IN APPENDIX	C FOR RESPONSES

Seismic Walkdo	wn Checklist	(SWC) SUPP	PLEMENTAL C	ABINET INSPECT	ION	Status: Y	4 U
Equipment ID No.: ER18A (SEE APPENDIX C PAGE C-87)							
Equip	oment Class:	(20) Instrum	entation and Co	ontrol Panels and C	abinets		
Equipment	Description:	CORE SPR	AY/AUTO DEPF	RESS'N SYSTEM F		OGIC PANEL	
Other Adverse C	onditions (S	UPPLEMENT	AL CABINET I				
11. Have you	looked for an	d found no ac	dverse seismic o	conditions that coul	d		
adversely	affect the sal	ety functions	of the equipmer	nt? 		N	
a. II b. A	nternal compo uro odiocont o	nents secured	d? (I.e. no loose od togothor?	or missing fastene	ers)	Yes	
D. A	lo other adver	se seismic co	anditions?			Yes	
See Seismic Qua	lification SQ-C	DC-ER-18A R	ev 1				
Calculation C-130 NRC IE Bulletin 8	02X-322C-A06 0-11.	o qualifies the	Oyster Creek s	afety-related maso	nry walls	for seismic to addre	SS
Equipment has <u>E</u>	xternal and	horage.					
Evaluated by:	Manf	& Elie	Mark S. Etro	9	Date:	10/26/2012	
	So	n Be	Seth W	. Baker		10/26/2012	
Photos			, , , , , , , , , , , , , , , , ,				



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IMG\_4514

Status: Y

N U





Equipment Description:



IMG\_4515

IMG\_4516

Seismio	: Walkdown Checklist (SV	Status: Y N
	Equipment ID No.: LS	SP-1A2 (SEE APPENDIX C PAGE C- 132)
	Equipment Class: (20	) Instrumentation and Control Panels and Cabinets
E	quipment Description: LC	DCAL SHUTDOWN PANEL- USS 1A2 PUMP/BREAKER CONTROL
	Project:	Oyster Creek SWEL
Locatior	n (Bldg, Elev, Room/Area):	RB, 23.00 ft, 16
	Manufacturer/Model:	
Instruct	ions for Completing Che	cklist
This che SWEL. findings	ecklist may be used to docu The space below each of the Additional space is provided to the space of the spac	ment the results of the Seismic Walkdown of an item of equipment on the he following questions may be used to record the results of judgments and led at the end of this checklist for documenting other comments.
<u>Ancho</u>	rage	
1.	Is anchorage configuration	n verification required (i.e., is the item one of the 50%
2.	Is the anchorage free of b	ent, broken, missing or loose hardware?
3.	Is the anchorage free of c	orrosion that is more than mild surface oxidation?
4.	Is the anchorage free of v	isible cracks in the concrete near the anchors?
5.	Is the anchorage configur This question only applies configuration verification i	ation consistent with plant documentation? (Note: s if the item is one of the 50% for which an anchorage s required )
6.	Based on the above anch potentially adverse seism	orage evaluations, is the anchorage free of ic conditions?
	SEE SWC IN APPENDIX	C FOR RESPONSES
Interac	ction Effects	
7.	Are soft targets free from	impact by nearby equipment or structures?
8. 9.	Are overhead equipment, masonry block walls not li Do attached lines have ad	distribution systems, ceiling tiles and lighting, and kely to collapse onto the equipment? dequate flexibility to avoid damage?
10.	Based on the above seisr potentially adverse seism	nic interaction evaluations, is equipment free of ic interaction effects?
	SEE SWC IN APPENDIX	C FOR RESPONSES

Equipment ID No.:	LSP-1A2 (SEE APPENDIX C PAGE C- 1	32)		
Equipment Class:	(20) Instrumentation and Control Panels a	nd Cabinets		
Equipment Description:	LOCAL SHUTDOWN PANEL- USS 1A2 F	PUMP/BREAKER CONTROL		
ther Adverse Conditions (	SUPPLEMENTAL CABINET INSPECTION	<b>,</b>		
11. Have you looked for a	and found no adverse seismic conditions that	at could		
adversely affect the s	afety functions of the equipment?			
a. Internal comp	oonents secured? (i.e. no loose or missing f	asteners)	Yes	
b. Are adjacent	cabinets secured together?		N/A	
C. NO OTHER AUX			Tes	
comments				
uipment has external ancho	rage.			
See SQ-OC-LSP-TAZ Rev 02				
200	1185			
Evaluated by:	Mark S. Etre	Date:	10/26/2012	
	Bui			

**Photos** 







IMG\_1010

Status:

N U

Y



Equipment ID No.: LSP-1A2 (SEE APPENDIX C PAGE C- 132)

Equipment Class: (20) Instrumentation and Control Panels and Cabinets

Equipment Description: LOCAL SHUTDOWN PANEL- USS 1A2 PUMP/BREAKER CONTROL





IMG\_1011

IMG\_1015

Seism	Status: Y N	U					
	Equipment ID No.: 1A21A-460V (SEE APPENDIX C PAGE C-8)						
	Equipment Class: (1) Motor Control Centers						
	Equipment Description: MCC 1A21A 460V,3P,3W,60HZ FOR REACTOR BUILDING						
	Project: Oyster Creek SWEL						
Locatio	on (Bldg, Elev, Room/Area): RB, 23.00 ft, 08						
	Manufacturer/Model:						
Instru	ctions for Completing Checklist						
This cł SWEL finding	necklist may be used to document the results of the Seismic Walkdown of an item of equipment on the The space below each of the following questions may be used to record the results of judgments and s. Additional space is provided at the end of this checklist for documenting other comments.						
Ancho	<u>irage</u>						
1.	of SWEL items requiring such verification)?	-					
2.	2. Is the anchorage free of bent, broken, missing or loose hardware?						
3.	Is the anchorage free of corrosion that is more than mild surface oxidation?						
4.	Is the anchorage free of visible cracks in the concrete near the anchors?	-					
5. 6.	Is the anchorage configuration consistent with plant documentation? (Note: This question only applies if the item is one of the 50% for which an anchorage configuration verification is required.) Based on the above anchorage evaluations, is the anchorage free of potentially adverse seismic conditions?	-					
	SEE SWC IN APPENDIX C FOR RESPONSES						
Interac	ction Effects						
7.	Are soft targets free from impact by nearby equipment or structures?	-					
8.	Are overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls not likely to collapse onto the equipment?	-					
9.	Do attached lines have adequate flexibility to avoid damage?	-					
10.	Based on the above seismic interaction evaluations, is equipment free of potentially adverse seismic interaction effects?	-					
	SEE SWC IN APPENDIX C FOR RESPONSES						

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Seismic Walkdow	n Checklist	(SWC) SUPP	LEMENTAL C	ABINET INSPE		Status: Y N U
Equipm	ent ID No.:	`	(SEE APPEN	DIX C PAGE C-8	3)	
Equipn	nent Class:	(1) Motor Co	ontrol Centers			
Equipment D	escription:	MCC 1A21A	460V,3P,3W,	60HZ FOR READ	TOR BUILD	ING
Other Adverse Co	nditions (S	JPPLEMENT	AL CABINET	NSPECTION)		
11. Have you le adversely a a. Inte b. Are c. No	ooked for an iffect the saf ernal compo a adjacent ca other adver	d found no ad ety functions nents secured abinets secure se seismic co	lverse seismic of the equipme d? (i.e. no loose ed together? nditions?	conditions that c nt? e or missing faste	ould eners)	Yes Yes Yes
The lower and side p areas opened. There reviewing Other Adv	oanels were e is no reasc erse Conditi	opened. The n to believe th ons are satisf	Breakers were hat the areas ir ïed.	not removed. Th the buckets pos	ere were no e an issue a	issues found in the nd the intent of
External Anchorage 1A2A-460V-MCC External Supports a Equipment has exter	e was compl are consister mal anchora	eted during or nt with Calcula ge.	nline walk dow ation C-1302-7	n. External ancho 32-5320-014 Rev	orage is as do	ocumented in SQ-OC-
Evaluated by:	Mar/ Sco	's Ehr Be	Mark S. Et	re V. Baker	Date:	10/26/2012 10/26/2012

## Seismic Walkdown Checklist (SWC) SUPPLEMENTAL CABINET INSPECTION) Status: Y N U Equipment ID No.: 1A21A-460V (SEE APPENDIX C PAGE C-8) Equipment Class: (1) Motor Control Centers Equipment Description: MCC 1A21A 460V,3P,3W,60HZ FOR REACTOR BUILDING

### **Photos**



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IMG\_0976

IMG\_0978



IMG\_0975







Seismic Walkdown Checklist	(SWC) SUPPLEMENTAL CA	ABINET INSPECTIO	Sta	itus: Y N U
Equipment ID No.:	1A21A-460V (SEE APPEND	DIX C PAGE C-8)		
Equipment Class:	(1) Motor Control Centers			
Equipment Description:	MCC 1A21A 460V,3P,3W,6	0HZ FOR REACTO	R BUILDING	

### Appendix AD Area Walk-By Checklists (AWCs)

Table AD-1 provides the location of each walk-by area that was previously inaccessible and deferred, as well as a list of walkdown items associated with each area.
Area	Area	Components Within Area	Comments
71104	Description		Outimenta
			General housekeeping concerns regarding transient
			materials throughout area during the outage. No soft
			targets in the area. Per discussions with operations all of
			the housekeeping concerns will be received prior to
	Truppion		ctart-up. Scaffolding is installed par the Ovetor Crook
20	Room	PK /11 1 8 V 1 10	Scaffelding procedures and is Seismically restrained
29	KUUIII	KK-411-1 & V-1-10	scarroiding procedures and is seismically restrained.
			Constal housekeeping concerns regarding transient
			materials throughout area during the outage. No soft
			targets in the area. Ber discussions with exercisions all of
			the boucekeeping concerns will be received prior to
:	OmuvellWest		the housekeeping concerns will be resolved phor to
20			Start-up. Scarrolding is installed per the Oyster Creek
30	Side	V-1-/&V-1-106	Scamololing procedures and is Seismically restrained.
			General nousekeeping concerns regarding transient
			materials throughout area during the outage. No soft
			targets in the area. Per discussions with operations all of
	-		the housekeeping concerns will be resolved prior to
	Drywell South-	V-1-177, V-16-1, V-1-160 &	start–up. Scaffolding is installed per the Oyster Creek
31	West	V-1-173	Scaffolding procedures and is Seismically restrained.
			General housekeeping concerns regarding transient
			materials throughout area during the outage. No soft
			targets in the area. Per discussions with operations all of
			the housekeeping concerns will be resolved prior to
	Drywell North-		start–up. Scaffolding is installed per the Oyster Creek
32	West	V-1-164 & V-1-175	Scaffolding procedures and is Seismically restrained.

#### Table AD-1. Summary of Area Walk-By Checklists

Area V	Valk-By Checklist (AWC)	Status: Y N U
Lo	cation (Bldg, Elev, Room/Area): Area 29: RB, 23	
Instru	ctions for Completing Checklist	·····
This cl space Additic	necklist may be used to document the results of the Area Walk-By near one or more below each of the following questions may be used to record the results of judgmen onal space is provided at the end of this checklist for documenting other comments.	SWEL items. The ts and findings.
1.	Does anchorage of equipment in the area appear to be free of potentially adverse seismic conditions (if visible without necessarily opening cabinets)?	Yes
2.	Does anchorage of equipment in the area appear to be free of significant degraded conditions?	Yes
3.	Based on a visual inspection from the floor, do the cable/conduit raceways and HVAC ducting appear to be free of potentially adverse seismic conditions (e.g., condition of supports is adequate and fill conditions of cable trays appear to be inside acceptable limits)?	Yes
4.	Does it appear that the area is free of potentially adverse seismic spatial interactions with other equipment in the area (e.g., ceiling tiles and lighting)?	Yes
5.	Does it appear that the area is free of potentially adverse seismic interactions that could cause flooding or spray in the area?	Yes
6.	Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	Yes
7.	Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	Yes

Area Walk-By Che	ecklist (AWC)			Status: Y	ט א [
Location (Bldg	Elev, Room/Area):	Area 29: RB, 23			
8. Have you looked for and found no other seismic conditions that could You adversely affect the safety functions of the equipment in the area? General housekeeping concerns regarding transient materials throughout area during the outage. No soft targets in the area. Per discussions with operations all of the housekeeping concerns will be resolved prior to start-up. Scaffolding is installed per the Oyster Creek Scaffolding procedures and is					
<u>Comments</u>					
Evaluated by:	Mand & Et	Mark S. Etre Ber Seth W. Baker	Date:	10/26/2012 10/26/2012	
<u>Photos</u>					

Area Walk-Ry Checklist (AWC)	Status: Y N U
Location (blug, Elev, Room/Alea). Alea so. DW, 25	
This checklist may be used to document the results of the Area Walk-By near on space below each of the following questions may be used to record the results or Additional space is provided at the end of this checklist for documenting other co	e or more SWEL items. The fjudgments and findings.
1. Does anchorage of equipment in the area appear to be free of potentially adverse seismic conditions (if visible without necessarily opening cabine	y Yes ts)?
2. Does anchorage of equipment in the area appear to be free of significan degraded conditions?	t Yes
3. Based on a visual inspection from the floor, do the cable/conduit racewa HVAC ducting appear to be free of potentially adverse seismic conditions condition of supports is adequate and fill conditions of cable trays appea inside acceptable limits)?	ys and Yes s (e.g., r to be
<ol> <li>Does it appear that the area is free of potentially adverse seismic spatial interactions with other equipment in the area (e.g., ceiling tiles and lighting</li> </ol>	ng)?
5. Does it appear that the area is free of potentially adverse seismic interac that could cause flooding or spray in the area?	ctions Yes
6. Does it appear that the area is free of potentially adverse seismic interac that could cause a fire in the area?	ctions Yes
<ol> <li>Does it appear that the area is free of potentially adverse seismic interac associated with housekeeping practices, storage of portable equipment, temporary installations (e.g., scaffolding, lead shielding)?</li> </ol>	ctions Yes and

Area Walk-By Che	ecklist (AWC)		Status: Y N U
Location (Bldg	Elev Room/Area): Area 30: DW 23		
8. Have you l adversely General l area during operations Scaffolding Seismicall	ooked for and found no other seismic conditions that could affect the safety functions of the equipment in the area? housekeeping concerns regarding transient materials through g the outage. No soft targets in the area. Per discussions with all of the housekeeping concerns will be resolved prior to sta g is installed per the Oyster Creek Scaffolding procedures and y restrained.	out rt–up. Lis	Yes
<u>Comments</u>			
Evaluated by:	Man S Elize Mark S. Etre SunBen Seth W. Baker	Date:	10/26/2012 10/26/2012
<u>Photos</u>			

Status: Y N U

#### Area Walk-By Checklist (AWC)

Location (Bldg, Elev, Room/Area): Area 30: DW, 23



IMG\_4468



IMG\_4469

	Status: Y N U
Area Walk-By Checklist (AWC)	
Location (Bldg, Elev, Room/Area): Area 30: DW, 23	
IMG_4470	

Area V	Valk-By Checklist (AWC)	Status: Y N U
Lo	cation (Bldg, Elev, Room/Area): Area 31: DW, 46	
Instruc	ctions for Completing Checklist	
This ch space Additio	necklist may be used to document the results of the Area Walk-By near one or more s below each of the following questions may be used to record the results of judgments nal space is provided at the end of this checklist for documenting other comments.	SWEL items. The s and findings.
1.	Does anchorage of equipment in the area appear to be free of potentially adverse seismic conditions (if visible without necessarily opening cabinets)?	Yes
2.	Does anchorage of equipment in the area appear to be free of significant degraded conditions?	Yes
3.	Based on a visual inspection from the floor, do the cable/conduit raceways and HVAC ducting appear to be free of potentially adverse seismic conditions (e.g., condition of supports is adequate and fill conditions of cable trays appear to be inside acceptable limits)?	Yes
4.	Does it appear that the area is free of potentially adverse seismic spatial interactions with other equipment in the area (e.g., ceiling tiles and lighting)?	Yes
5.	Does it appear that the area is free of potentially adverse seismic interactions that could cause flooding or spray in the area?	Yes
6.	Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	Yes
7.	Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	Yes

Area Walk-By Che	ecklist (AWC)		Status: Y	]N U
Location (Bldg	Fley Room/Area): Area 31: DW 46			
8. Have you le adversely a General h area during operations Scaffolding Seismically	booked for and found no other seismic conditions that could affect the safety functions of the equipment in the area? housekeeping concerns regarding transient materials through the outage. No soft targets in the area. Per discussions with all of the housekeeping concerns will be resolved prior to stat is installed per the Oyster Creek Scaffolding procedures and restrained.	out rt–up. 1 is		Yes
<u>Comments</u>				
Evaluated by:	Man S Est	Date:	10/26/2012	
	SunBun Seth W. Baker	-	10/26/2012	
Photos				

Area Walk-By Checklist (AWC)	Status: Y N U
Location (Bidg, Elev, Room/Area): Area 31: DVV, 46	
Image: Ministration of the second	

Area V	Valk-By Checklist (AWC)	Status: Y N U
Lo	cation (Bldg, Elev, Room/Area): Area 32: DW, 46	
Instru	ctions for Completing Checklist	
This cl space Additic	necklist may be used to document the results of the Area Walk-By near one or more s below each of the following questions may be used to record the results of judgments onal space is provided at the end of this checklist for documenting other comments.	SWEL items. The sand findings.
1.	Does anchorage of equipment in the area appear to be free of potentially adverse seismic conditions (if visible without necessarily opening cabinets)?	Yes
2.	Does anchorage of equipment in the area appear to be free of significant degraded conditions?	Yes
3.	Based on a visual inspection from the floor, do the cable/conduit raceways and HVAC ducting appear to be free of potentially adverse seismic conditions (e.g., condition of supports is adequate and fill conditions of cable trays appear to be inside acceptable limits)?	Yes
4.	Does it appear that the area is free of potentially adverse seismic spatial interactions with other equipment in the area (e.g., ceiling tiles and lighting)?	Yes
5.	Does it appear that the area is free of potentially adverse seismic interactions that could cause flooding or spray in the area?	Yes
6.	Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	Yes
7.	Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	Yes

Area Walk-By Che	acklist (AWC)		Status: Y	]N U	ļ
Location (Bldg	Elev Room/Area): Area 32: DW 46				
8. Have you le adverselv a	ooked for and found no other seismic conditions that could affect the safety functions of the equipment in the area?			Yes	
General h	nousekeeping concerns regarding transient materials throughout	t			
area during operations	g the outage. No soft targets in the area. Per discussions with all of the housekeeping concerns will be resolved prior to start-	up.			
Scaffolding Seismically	g is installed per the Oyster Creek Scaffolding procedures and is v restrained	5			
<u>Comments</u>	y resuanted.				—
	Man & Elind				
Evaluated by:	Mark S. Etre	Date:	10/26/2012		
	Standburn Seth W. Baker		10/26/2012		
Photos					

## **Appendix AE** Plan for Future Seismic Walkdown of Inaccessible Equipment

One (1) item was not accessible during the follow-on walkdowns. This item will be walked down during a time when the equipment is accessible. Table AE-1 summarizes the reasons this item is inaccessible during normal plant operation and notes the Oyster Creek Station Issue Report IR that has been written to track completion of the Seismic Walkdown for this item.

Per Section 5.4, supplemental internal inspections of certain cabinets are required due to clarification provided by the NRC after the online Seismic Walkdowns were completed. Therefore the item identified on Table AE-1 requires a complete inspection, including internal inspection for other adverse seismic conditions.

The Area Walk-By of the vicinity of this equipment was completed previously and was documented in Appendix D of this report.

Component ID	Description	Reason for Inaccessibility	Action Request ID (IR)	Resolution/ Status	Milestone Completion
DC-C 125V	125VDC POWER PANEL DC-C CENTER 'C'	Equipment always energized.	IR 1451018	Open	4Q2018

#### Table AE-1. Inaccessible and Deferred Equipment

## Appendix AF Peer Review Report

This appendix includes the Peer Review Team's report on the follow-on seismic Walkdowns and Walk-Bys.

### Peer Review Report for Near Term Task Force (NTTF) Recommendation 2.3 Seismic Walkdown Inspection <u>of</u> Oyster Creek Generating Station

## Annex A

March 15, 2013

Prepared by Peer Reviewers

Michael Hand (Team Leader) Anthony Osam-Duodu

Michael Hand / Michael 4/1/13 SCE Peer Review Team Leader Certification Signature

# **1** Introduction

#### **1.1 OVERVIEW**

This report documents the independent peer review for the Near-Term Task Force (NTTF) Recommendation 2.3: Seismic Walkdown, Annex 'A' follow-on activities performed by Exelon Oyster Creek Engineering Department for Unit 1 of the Oyster Creek Generating Station (OCGS). This peer review includes review of pages iii and ix of Report RS-12-177 as updated to reflect Annex 'A'. The peer review process includes the following activities:

- Review the selection of the structures, systems, and components (SSCs) included in this follow-on walkdown.
- Review the checklists of the items completed during the follow-on Seismic Walkdowns and Area Walk-Bys.
- Review the licensing basis evaluations.
- Review the decisions for entering the adverse seismic conditions identified during the follow-on walkdowns into the plant's Corrective Action Plan (CAP).
- Review the final submittal report.
- Summarize the results of the peer review process in the final submittal report.

The peer reviewers for OCGS, Unit 1 are Messrs. Michael Hand and Anthony Osam-Duodu, all of Oyster Creek. Mr. M. Hand is designated the Peer Review Team Leader. None of the aforementioned engineers were involved in the follow-on seismic walkdown inspection process, and so that they can maintain their independence from the project. Mr. Hand is a civil-structural engineer, with over 30 years of experience, including 13 years nuclear seismic experience. He is also a Seismic Capability Engineer (EPRI SQUG training). Mr. Osam-Duodu has over 25 years of experience covering all aspect of Civil/Structural Engineering and Project Management. He is also a Seismic Capability Engineer (EPRI SQUG training).

The peer review of the follow-on seismic walkdown inspection started on March 6, 2013.

The peer review discussions on the follow-on activities are documented herein.

No issues were identified which challenged the current licensing basis.

# **2** Peer Review - Selection of SSCs

#### 2.1 PURPOSE

The purpose of this section is to describe the process to perform the peer review of the selected structures, systems, and components, (SSCs) that were included in the Seismic Walkdown Equipment List (SWEL).

However, this peer review is performed for the SSC's that were previously inaccessible and were completed during the follow-on Seismic Walkdowns and Area Walk-Bys. There are no changes to the SWEL, so the selection of new SSCs does not apply in this case.

This peer review is based on an interview with the seismic walkdown engineer (SWE) and report preparer, Mr. Wing Ho subsequent to performance of those activities.

# **3** Review of Follow-on Seismic Walkdown & Area Walk-By Checklists

#### 3.1 OVERVIEW

A peer review of the remaining (Annex 'A') SWCs and AWCs was performed on March 11, 2013, after which an interview was conducted by Messrs. Hand and Osam-Duodu with the SWE trained walkdown engineer, Mr. Wing Ho, in accordance with the requirements of the EPRI Document No. 1025286 entitled "Seismic Walkdown Guidance For Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic" (SWG requirements). Mr. Ho provided input as a participant with the other SWE's, Mssrs Mark Etre and Seth Baker of Stevenson & Associates, Inc, to satisfy the peer reviewers that the walkdowns were conducted appropriately by qualified personnel in accordance with the SWG requirements.

#### 3.2 FOLLOW-ON SEISMIC WALKDOWN CHECKLISTS

100% of the equipment inspected during the follow-on walkdown are included in the peer review, see follow-on Seismic Walkdown, and Area Walk-By Checklists presented below:

Component ID	Description	Observations
V-1-160	SAFETY RELIEF VALVE NR28D (SOUTH HEADER)	No concerns
V-1-164	SAFETY RELIEF VALVE NR28H (NORTH HEADER)	No concerns
V-1-173	ELECTROMATIC RELIEF VALVE NR108-A(SOUTH HEADER)	No concerns
V-1-175	ELECTROMATIC RELIEF VALVE NR108-C(NORTH HEADER)	No concerns
V-1-177	ELECTROMATIC RELIEF VALVE NR108-E(SOUTH HEADER)	No concerns
V-16-1	CU INLET ISOLATION VALVE FROM REACTOR VESSEL	No concerns
V-1-106	MAIN STEAM LINE 'A' DRAIN VALVE	No concerns
V-1-7	MAIN STEAM LINE'A' OUTLET ISOLATION VALVE(NS03-A)	No concerns
RK-411-1	MSIV'S SOLENOID AIR VALVE & EQUIPMENT MOUNTING RACK	No concerns
V-1-10	MAIN STEAM LINE'B' OUTLET ISOLATION VALVE (NS04-B)	No concerns
1A21-460V	1-460V MCC 1A21 460V,3PH,3W,60HZ FOR TURBINE BUILDING	
1A21B-460V	MCC 1A21B 460V,3P,3W,60HZ FOR REACTOR BUILDING	No concerns
1A23-460V	MCC 1A23 460V,3PH,3W,60HZ FOR REACTOR BUILDING	No concerns
1A2-460V	460V UNIT SUBSTATION 1A2 FOR REACTOR BUILDING	No concerns
1C	4160V BUS 1C SWITCHGEAR	No concerns

#### Table A3-1 Follow-on Seismic Walkdown Checklists

Component ID	Description	Observations
BTCHG C1	'C' STATION BATTERY SOLID STATE STATIC CHARGER C1	No concerns
DG-1 BATTERY CHARGER	DIESEL GENERATOR UNIT #1 BATTERY CHARGER	No concerns
DG-1 SWGR	DIESEL GENERATOR #1 UNIT SWITCHGEAR	No concerns
ER18A	CORE SPRAY/AUTO DEPRESS'N SYSTEM RELAY LOGIC PANEL	No concerns
LSP-1A2	LOCAL SHUTDOWN PANEL- USS 1A2 PUMP/BREAKER CONTROL	No concerns
1A21A-460V	MCC 1A21A 460V, 3P, 3W, 60HZ, FOR REACTOR BUILDING	No concerns

#### Table A3-2 Follow-on Seismic Walkdown Checklists for Supplemental Internal Inspections

#### Table A3-3 Follow-on Area Walk-By Checklists

Area	Area Description	Components Within Area	Observations
29	Trunnion Room	RK-411-1 & V-1-10	No concerns
30	Drywell West Side	V-1-7 & V-1-106	No concerns
31	Drywell South-West	V-1-177, V-16-1, V-1-160 & V-1-173	No concerns
32	Drywell North-West	V-1-164 & V-1-175	No concerns

#### 3.3 EVALUATION OF FINDINGS

There were no issues that challenged the licensing bases.

The outcome of the walkdowns indicated that there were no major concerns from the inspections conducted, and the peer reviewers consider the engineering judgments made by the inspectors as appropriate and acceptable, per the EPRI Seismic Walkdown Guidance.

Further, all the outstanding uncompleted corrective action issues in Report RS-12-177 have been addressed, as shown in Tables A5-2 and A5-3 of Annex 'A'.

# **4** Review of Licensing Basis Assessments

There were no issues that challenged the licensing bases for the follow-on items, so there were no assessments required. The peer reviewers concur with this outcome.

## **5** Review Final Submittal Report & Sign-off

The final supplemental report has been reviewed by Messrs. M. Hand and A. Osam-Duodu per the requirements of EPRI Seismic Walkdown Guidance (EPRI Report 1025286), and found to be acceptable. The review comments have been duly addressed and appropriately incorporated in the Report.