

UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

July 2, 2014

Mr. Michael J. Pacilio President and Chief Nuclear Officer Exelon Nuclear 4300 Winfield Road Warrenville, IL 60555

SUBJECT:

PLAN TO AUDIT THE REGIONAL RESPONSE CENTER PROOF OF CONCEPT DEMONSTRATION WITH THREE MILE ISLAND NUCLEAR STATION, UNIT 1 REGARDING IMPLEMENTATION OF PHASE 3 RELATED TO ORDER EA-12-049 (MITIGATING STRATEGIES)

Dear Mr. Pacilio:

On March 12, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12054A736), requiring holders of operating licenses and construction permits issued under Title 10 of the *Code of Federal Regulations* Part 50 to submit for review, Overall Integrated Plans (OIPs) including descriptions of how compliance with the requirements of Attachment 2 of the order will be achieved.

This order requires a three-phase approach for mitigating beyond-design-basis external events. The initial phase requires the use of installed equipment and resources to maintain or restore core cooling, containment and spent fuel pool (SFP) cooling capabilities. The transition phase requires providing sufficient, portable, onsite equipment and consumables to maintain or restore these functions until they can be accomplished with resources brought from off site. The final phase requires obtaining sufficient offsite resources to sustain those functions indefinitely. Industry is working cooperatively via the Strategic Alliance for FLEX Emergency Response (SAFER) to implement Regional Response Centers (RRCs) in Memphis, TN, and Phoenix, AZ as the repositories for offsite resources.

On July 10, 2014, the SAFER organization and staff from Three Mile Island Nuclear Station, Unit 1 (TMI) plan to conduct a demonstration of SAFER's ability to activate the SAFER Control Center, as well as the Memphis RRC and deliver Phase 3 off-site equipment to the TMI site in accordance with the SAFER response plan. The enclosed document outlines the audit process that the NRC staff will follow while observing this demonstration. The NRC staff will document its observations from the demonstration as part of its evaluation of the readiness of the RRCs and the SAFER organization to support Phase 3 of licensees' Mitigating Strategies in response to Order EA-12-049.

If you have any questions, please contact me at 301-415-2365 or by e-mail at Stephen.Philpott@nrc.gov.

Sincerely,

Stephen Philpott, Project Manager Orders Management Branch Japan Lessons-Learned Division Office of Nuclear Reactor Regulation

Docket No: 50-289

Enclosure: Audit plan

cc w/ encl: Distribution via Listserv

Audit Plan SAFER Response Proof of Concept Demonstration

Three Mile Island Nuclear Station, Unit 1 Regional Response Center - Memphis, TN SAFER Control Center - Lynchburg, VA

BACKGROUND AND AUDIT BASIS

On March 12, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12054A736), requiring holders of operating licenses and construction permits issued under Title 10 of the *Code of Federal Regulations* Part 50 to submit for review, Overall Integrated Plans (OIPs) including descriptions of how compliance with the requirements of Attachment 2 of the order will be achieved. In accordance with the order, the OIPs were submitted by February 2013, and required subsequent 6-month updates were submitted in August 2013 and February 2014. Licensees are in the process of implementing the requirements identified in the order. Licensees are required to complete full implementation no later than two refueling cycles after submittal of the OIPs or by December 31, 2016, whichever comes first.

Since receiving the OIPs, the NRC staff has started the audit process, as well as reviewing any related additional information, to determine the extent to which the licensees are proceeding on a path towards successful implementation. The NRC staff has provided feedback to licensees on their submittals via Interim Staff Evaluations (ISEs); which were completed in February 2014. Order EA-12-049 requires a three-phase approach for mitigating beyond-design-basis external events (BDBEE). The initial phase requires the use of installed equipment and resources to maintain or restore core cooling, containment and spent fuel pool (SFP) cooling capabilities. The transition phase requires providing sufficient, portable, onsite equipment and consumables to maintain or restore these functions until they can be accomplished with resources brought from off site. The final phase requires obtaining sufficient offsite resources to sustain those functions indefinitely. Industry is working cooperatively to implement Regional Response Centers (RRCs) in Memphis, TN and Phoenix, AZ as the repositories for offsite resources. The cooperative organization formed to manage and maintain these offsite resources and implement the Phase 3 offsite response is the Strategic Alliance for FLEX Emergency Response (SAFER).

The SAFER organization and staff from Three Mile Island Nuclear Station, Unit 1 (TMI) plan to conduct a demonstration of SAFER's ability to activate the SAFER Control Center (SCC) in Lynchburg, VA, as well as a the Memphis RRC, and deliver Phase 3 offsite equipment to the TMI site in accordance with the SAFER response plan on July 10, 2014. This document outlines the audit process that the NRC staff will follow while observing this demonstration. The NRC staff will document its observations from the proof-of-concept demonstration as part of its evaluation of the readiness of the RRCs and the SAFER organization to support Phase 3 of licensees' Mitigating Strategies in response to Order EA-12-049.

NRC staff will observe and evaluate the Proof-of-Concept demonstration in accordance with the SAFER Response Plan based on the requirements in Order EA-12-049.

The Nuclear Energy Institute (NEI) developed NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide" in August, 2012 (ADAMS Accession No. ML12242A378) to outline a process, by which, individual licensees would define and implement site-specific diverse and flexible mitigation strategies that reduce the risk associated with beyond-design-basis conditions. FLEX represents the industry's approach to addressing the three phase approach for mitigation strategies, as described above. This guide was endorsed, with clarifications, by NRC interim staff guidance (ISG) JLD-ISG-2012-01 "Compliance with Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" (ADAMS Accession No. ML12229A174).

AUDIT SCOPE

The purpose of the audits is to observe the industry's RRC proof-of-concept demonstration in order to evaluate: (1) coordination between the licensee, the SAFER organization, and state and local officials in a simulated BDBEE scenario requiring the need for offsite equipment, and (2) the SAFER organization's ability and readiness to deliver needed offsite equipment to a United States nuclear power plant to support the licensees' Phase 3 strategies needed to comply with Order EA-12-049 (Mitigating Strategies).

The audit will be performed in accordance with NRC Office of Nuclear Reactor Regulation (NRR) Office Instruction LIC-111, "Regulatory Audits," (ADAMS Accession No. ML082900195) to support the development of safety evaluations regarding licensees' final integrated plans in response to Order EA-12-049.

NRC AUDIT TEAM AND LOGISTICS

NRC staff will observe the RRC Proof-of-Concept demonstration at various locations at or near TMI, at the SAFER Control Center in Lynchburg, VA, and at the RRC in Memphis, TN on July 10, 2014.

Area of Review	Assigned Auditor(s)
TMI Simulated Control Room	John Hughey, NRR
	Eric Schrader, NSIR
EOF ERO / Exelon Corporate	Mandy Halter, NRR
	Amanda Marshall, NSIR
EOF – State & Local Agencies	Stephen Monarque, NRR
	Amanda Marshall, NSIR
Staging Area "C"	Joshua Miller, NRR
Staging Area "B"	John Hughey, NRR
	Eric Schrader, NSIR
TMI Area - Additional Observers	Jack Davis, NRR
	Jeremy Bowen, NRR
	Ho Nieh, RI

	Mohammed Shuaibi, RIII
RRC – Memphis, TN	Stephen Philpott, NRR
·	Jason Paige, NRR
	Sheena Whaley, NRR
SAFER Control Center – Lynchburg, VA	Eric Bowman, NRR
	Joseph Anderson, NSIR

DELIVERABLES

NRC staff will conduct an exit meeting via conference call with the SAFER organization and TMI staff on a date to be determined following the RRC Proof-of-Concept demonstration in order to provide verbal observations.

Formal NRC observations will be documented in a report format following the SAFER organization's notification to the NRC that the RRCs are operational. NRC staff currently estimates that this report will be issued to the SAFER organization in September 2014.

INFORMATION NEEDS

- Latest version of the TMI SAFER Response Plan ("playbook")
- RRC SAFER Plan for Proof of Concept
- TMI operator and staff procedures

NRC Staff Schedule

(Subject to change based on timing of the demonstration)

Thursday, July 10, 2014

0730	Check in at demonstration locations
0800	Begin exercise
1300	Conclude Exercise
1300	Lunch
1430	Controllers exercise review with participants (conference call with all locations)
1530	Departure

RRC Proof of Concept Objectives
TMI Simulated Control Room
South Office Building (Unit 1 Admin Building)
Middletown, PA

<u>Participants</u>	<u>Objective</u>	Est Actual Time (Event hour)	Expected Actions
 Shift Emergency Director (ED) Shift Comm Security Shift Supervisor Shift Maint Shift Radiological Protection (RP) Tech 	Demonstrate the ability of the licensee to perform the initial request for SAFER FLEX Phase 3 equipment	8:00-8:30 (0-1)	Shift Comm calls Nuclear Duty Officer (NDO) to notify SCC
	Demonstrate effective communications and coordination with the EOF	8:30-9:00 (1-2) 10:30-12:00 (15-20)	 Shift ED advises CED of priority of equipment, nature of incident, selected SA location, & status of site access routes Shift ED advises CED that SA "B" is ready to receive equipment.
	Assessing and clearing of access routes, preps to receive shipment	8:30-9:00 (1-2) 10:00-10:30 (6-15)	 Assesses plant access & area infrastructure (SA "B", routes, etc.) coordinates clearing of access route impediments to SA "B" makes preparations to receive shipments at SA "B" (equipment movement, operation, connection, refueling, etc.)
	Coordination with Security / RP (Protected Area requirements)	10:00-10:30 (6-15)	determines Protected Area requirements for equipment & personnel (Security/RP)
	Demonstrate effective Command and Control Structure for a BDBEE	Throughout demonstration	 assesses additional resources to call in transitions from Phase 1 (installed) to Phase 2 equipment (onsite portable) make plans to transition from Phase 2 to Phase 3 equipment as Augmented ERO arrives, establishes reporting location

RRC Proof of Concept Objectives

Emergency Offsite Facility (EOF) Emergency Response Organization(ERO) / Exelon Corporate

Exelon EOF for TMI Coatesville, PA

<u>Participants</u>	<u>Objective</u>	Est Actual	Expected Actions
		Time (Event hour)	
 Corporate Emergency Director EOF Director 	Demonstrate the ability of the licensee to perform the initial request for SAFER FLEX Phase 3 equipment	8:00-8:30 (0-1)	NDO Calls Corp Duty Supply Corp Duty Supply calls SAFER 24/7 contact point
EOF Logistics Manager		8:00-8:30 (0-1)	Logistics Manager obtains Corp Duty Supply contact info from NDO, gets turnover from Corp Duty
 EOF Admin Coordinator EOF Security Coordinator NDO* Corporate Duty Supply * (* at normal work location) 	Demonstrate effective coordination between the site Single Point of Contact (SPOC) and the SAFER Control Center(SCC) until the SAFER SA Lead is operational	8:30-9:00 (1-2)	Supply, and assumes role of SPOC • SPOC advises SAFER of priority of equipment and nature of incident • The SPOC communicates a staging area "C" or "D" location and the associated access routes that are both accessible and available for
	at the staging area.	Throughout demonstration	 intended operations (status of site access routes) SCC and SPOC have periodic updates on shipment & routes (location/ETA) & mitigates potential issues/delays
	Demonstrate the ability to support the access of SAFER personnel and equipment to the nuclear site (i.e., assess and select access route and staging area, entry to site protected areas).	Throughout demonstration 8:30-9:00 (1-2)	 The SPOC coordinates access of SAFER equipment and personnel to the nuclear site (i.e., identifies access route to SA B and facilitates provisions for entry into restricted access areas). Assesses plant access and area infrastructure (SA B, routes, road conditions w/in 25-mile radius, etc.) coordinates clearing of
		9:00-10:00 (2–6)	access routes with EOC

Demonstrate effective coordination with SA "C" / SA Lead	10:00-12:00 (6-20)	SPOC interfaces with SA Lead After instructed by CED, SPOC notifies SA Lead to release equipment to site & coordinates truck escort with EOC, if requested
Demonstrate effective coordination with state and local agencies / officials	Throughout demonstration	State / Local agencies assess plant access and area infrastructure (routes to SA C and the site/SA B) Logistics Manager coordinates the escort of the trucks with the State when they arrive at the PA border coordinate clearing of route impediments from SA C to SA B
Simulate the Utility's SPOC support for the turnover of equipment.	12:00-13:00 (20-24)	The SPOC and SA Lead communicate to the SCC that RRC equipment has been received and turned over to utility personnel.

RRC Proof of Concept Objectives

Emergency Offsite Facility (EOF) – State and Local Agencies

Exelon EOF for TMI Coatesville, PA

<u>Participants</u>	<u>Objective</u>	Est Actual Time (Event hour)	Expected Actions
PEMA PA Bureau of Rad Prot (BRP)	Demonstrate effective licensee interface with the state and local representatives and the state and local officials' familiarity with licensee needs	8:30-9:00 (1-2)	assesses plant access and area infrastructure (routes to SA C/B and site, etc.)
PA State Police (PSP) Lancaster County	and requirements	9:00-10:00 (2-6)	coordinates clearing of route impediments from SA "C" to SA "B"
Dauphin County		10:00-10:30 (6-15)	When FedEx trucks nearing PA border, PSP set up police escort to SA "C"
		12:00-13:00 (20-24)	supports escort of convoy to SA "B", if necessary

RRC Proof of Concept Objectives
Staging Area "C"
Lancaster Airport
Lititz, PA

<u>Participants</u>	<u>Objective</u>	Est Actual Time	Expected Actions
		(Event hour)	
Site RP SupervisorSAFER SA	Demonstrate the ability to provide essential services for staging area personnel.	8:30-10:00 (1-6)	SA Coordinator will establish essential services (lodging, food, shelter), see also Appendix 5C, step 5.
 SAFER SA Lead SAFER SA Technician Lancaster Airport Officials 	Demonstrate effective coordination between the licensee and SA "C"	9:00-10:00 (2-6) 10:30-12:00 (15-20)	 SA C Facilities Mgr contacted by SPOC to ensure airport is ready RP Supervisor dispatched by Augmented ERO (prestaged at SA "C") RP Supervisor briefs personnel being dispatched to SA B rad brief [KI, RWP, emergency worker)] safety brief escort arrangements plant/road conditions
	Demonstrate mobilization of staging area personnel. (handled by SCC SA Coordinator)	10:00-10:30 (6-15)	SA personnel arrive at SA "C" at the required time (pre-staged) and establish communications with the SCC
	Demonstrate the ability to establish and maintain staging area facilities and equipment.	10:00-10:30 (6-15)	 SA Lead simulates establishing an operational staging area IAW with Appendix 5D and 5E. SA Lead reports to SCC Team Lead that SA C is operational
	Demonstrate the ability to manage arriving transportation providers upon arrival at the staging area.	10:00-10:30 (6-15)	SA Lead monitor the arrival of trucks and equipment as documented on Appendix 5I.
	Demonstrate command and control of the offsite staging area (SA "C") and the ability to manage the movement and release of shipments from the offsite staging area to the onsite staging area (SA "B").	10:00-10:30 (6-15)	SA lead will: Assume the role of communicator with the SPOC from the SCC Lead. Conduct staging area briefings as documented on Appendix 5H.

	10:30-12:00 (15-20)	Release equipment shipments as directed by the SPOC (When directed by the SPOC, SA Lead instructs truck drivers to deploy to site with specified equipment.)
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RRC Proof of Concept Objectives Augmented ERO and Staging Area "B" South Office Building (Unit 1 Admin Building) / Adjacent Parking Lot Middletown, PA

<u>Participants</u>	<u>Objective</u>	Est Actual Time (Event hour)	Expected Actions
Augmented ERO: Station Emergency Director Site Security	Assessing and clearing of access routes, preps to receive shipment, coordination with Security / RP (Protected Area requirements)	10:30-12:00 (15-20)	 prioritizes & prepares to receive equipment at SA "B" Security coordinates access and escort arrangements for personnel entering Protected Area
Coordinator Site Ops Supervisor OSC Director Site RP Supv	Simulate delivery / receipt and turnover of equipment at Staging Area (SA) "B"	12:00-13:00 (20-24)	 equipment arrives at SA "B" SAFER SA B personnel direct rigging and offloading of equipment (simulated), SAFER SA B personnel conduct equipment turnover and initial operation with site personnel (simulated)

RRC Proof of Concept Objectives
Regional Response Center
Memphis, TN

<u>Participants</u>	<u>Objective</u>	Est Actual Time (Event hour)	Expected Actions
■ RRC Lead	Demonstrate the activation of the RCC functions within 60 minutes from a utility request.	8:00-8:30 (0-1)	RRC staffing for activation occurs within 60 minutes from a utility request. Documented on SAFER Response Plan (SRP) Appendix 3C.
	Demonstrate command and control of operations at the RRC.	8:00-8:30 (0-1)	 The facility is functional as documented on SRP Appendix 3A. The RRC Lead initiates SRP Appendix 3D for initial contact.
	Simulate the ability to execute a loading and shipping strategy.	8:30-10:00 (1-6)	 The equipment is identified by review of the SRP Chapter 7 equipment list. FedEx arrives at RRC (simulated) Briefings are conducted IAW SRP Appendix 3E.
	Simulate deployment of equipment shipments from the RRC.	9:00-10:00 (2-6)	Inform the SAFER SCC Team Lead when all the equipment has left the RRC.
	Simulate deactivation of the RRC.	12:00-13:00 (20-24)	The RRC is deactivated IAW SRP Appendix 3B, (as required).

RRC Proof of Concept Objectives SAFER Control Center

Lynchburg, VA

<u>Participants</u>	<u>Objective</u>	Est Actual	Expected Actions
		Time (Event hour)	
 SCC Lead SCC L&T Coordinator SCC SA Coordinator 	Demonstrate the ability of the SAFER 24/7 notification point to receive a request for FLEX Phase 3 equipment and to notify the SAFER SCC Lead within 15 minutes.	8:00-8:30 (0-1)	SAFER 24/7 contact receive a request, log the time and notify the SAFER Team within 15 minutes following receipt of a request for RRC equipment.
	Demonstrate the ability of SAFER to notify SCC personnel to report to the demonstration SCC.	8:00-8:30 (0-1)	SCC personnel receive notification and respond.
	Demonstrate the ability of SAFER to notify RRC personnel to report to the demonstration RRC.	8:00-8:30 (0-1)	RRC personnel receive notification and respond.
	Demonstrate the activation of the SCC within 60 minutes from a utility request	8:00-8:30 (0-1)	SCC minimum staffing for activation is achieved within 60 minutes from a utility request and is documented in Appendix 2C of the SAFER Response Plan (SRP).
	Demonstrate the activation of the Staging Area Coordinator function at the SCC within 60 minutes from a utility request.	8:00-8:30 (0-1)	The SA Coordinator arrives at the SCC within the required time period as documented in SRP Appendix 2C.
	Demonstrate the activation of the L&T function at the SCC within 60 minutes from a utility request.	8:00-8:30 (0-1)	The L&T Coordinator arrives at the SCC within the required time period as documented in SRP Appendix 2C.
	Demonstrate mobilization of staging area personnel.	8:00-8:30 (0-1)	SA Coordinator identifies limited personnel and directs deployment to the staging area IAW SRP Appendix 5C.
	Demonstrate command and control of the SAFER response via the SCC Lead.	8:30-9:00 (1-2) and Throughout	The following are completed within 60 minutes of arrival: SRP Appendix 2A (Facility Preparation)

		demonstration	- SRP Appendix 2D (Initial Contact Checklist)
	Demonstrate effective communications via the SCC Lead and the site's Single Point of Contact (SPOC) until the staging area is operational.	8:30-10:30 (1-15)	Periodic communications with the SPOC occur regarding the assessment and selection of staging area and the associated access route accessibility. Periodic briefings are conducted IAW SRP Appendix 2E.
	Demonstrate the ability to notify and provide reporting instructions to ground transport providers for RRC shipments.	8:30-9:00 (1-2)	L&T Coordinator - Notifies ground transport providers using SRP Addendum B contact information (directs FedEx to report to RRC, determines mode of transportation, and notifies RRC)
	Demonstrate the ability to assess travel route conditions between the RRC and Staging Areas B, C or D.	8:30-9:00 (1-2)	 L&T Coordinator - Reviews the proposed travel routes and modes with the transportation provider. L&T Coordinator - Determines a Fly or Drive decision as documented in SRP Appendix 4C.
	Demonstrate the ability to coordinate the departure of shipments from the RRC and to maintain a status on the shipments.	Throughout Demonstration	 L&T Coordinator - Notifies the SCC of the ETA of transportation providers. L&T Coordinator - Acquires a status from transportation providers hourly or if there is a change. L&T Coordinator - Coordinate action for abnormal conditions IAW SRP Appendix 4B
	Simulate command and control for deactivation of the SCC.	12:00-13:00 (20-24)	The SCC Team Lead deactivates the SCC as documented in SRP Appendix 2B, (as required).

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If you have any questions, please contact me at 301-415-2365 or by e-mail at Stephen.Philpott@nrc.gov.

Sincerely,

/RA/

Stephen Philpott, Project Manager Orders Management Branch Japan Lessons Learned Division Office of Nuclear Reactor Regulation

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Enclosure: Audit plan

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