



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 10, 2014

Mr. Joseph W. Shea
Vice President, Nuclear Licensing
Tennessee Valley Authority
1101 Market Street, LP 3D-C
Chattanooga, TN 37402-2801

SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 2 - PLAN FOR THE ONSITE AUDIT
REGARDING IMPLEMENTATION OF MITIGATING STRATEGIES RELATED
TO 10 CFR 50.54(hh)(2) (TAC NO. ME4967)

Dear Mr. Shea:

On February 25, 2002, the U.S. Nuclear Regulatory Commission (NRC) issued Order EA-02-026, "Order for Interim Safeguards and Security Compensatory Measures" (referred to as the ICM Order) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML020510344), which modified then-operating licenses for commercial power reactor facilities to require compliance with specified interim safeguards and security compensatory measures. Section B.5.b of the ICM order requires licensees to adopt mitigation strategies using readily available resources to maintain or restore core cooling, containment, and Spent Fuel Pool (SFP) cooling capabilities to cope with the loss of large areas of the facility due to large fires and explosions from any cause, including beyond-design-basis aircraft impacts. By letter dated February 25, 2005, the NRC staff provided guidance for implementing Section B.5.b of the ICM order. This guidance is designated Safeguards Information (SGI) and is commonly referred to as the B.5.b Phase 1 Guidance.

On March 27, 2009, the NRC amended Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," and Part 73, "Physical Protection of Plants and Materials," with new requirements published in the *Federal Register* dated March 27, 2009 (74 FR 13926). This rulemaking added paragraph (i) to 10 CFR Section 50.34, "Contents of applications; technical information," to require submittal of a "description and plans for implementation of the guidance and strategies intended to maintain or restore core cooling, containment, and SFP cooling capabilities under the circumstances associated with the loss of large areas of the plant due to explosions or fire as required by § 50.54(hh)(2) of this chapter." This rulemaking also added 10 CFR 50.54(hh)(2) in order to impose the same mitigating strategies requirements on new reactor applicants and licensees as those imposed by the ICM order and associated license conditions.

By letter dated October 14, 2010 (ADAMS Accession No. ML102880314), Tennessee Valley Authority (TVA, the licensee) provided commitments for Watts Bar Nuclear Plant (WBN), Unit 2 to meet the requirements of 10 CFR 50.54(hh)(2) corresponding to the guidance of Nuclear Energy Institute (NEI) document 06-12, Revision 2, "B.5.b Phase 2 & 3 Submittal Guideline" (ADAMS Accession No. ML070090060). By letters dated March 28, 2011 and May 9, 2011 (ADAMS Accession Nos. ML110890557 and ML11131A124, respectively) (the "WBN 2 RAI Response"), TVA responded to an NRC letter dated February 18, 2011, "Request for Additional

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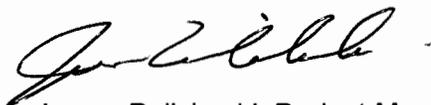
Information Regarding Mitigation Strategy Assessments and Closure Process for Phases 1, 2, and 3" (ADAMS Accession No. ML110330295), indicating that WBN Unit 2 would "follow the prearranged strategies developed for Unit 1 Phase 1 guidance."

In order to confirm the implementation at WBN Unit 2, of the "B.5.b" mitigating strategies required pursuant to Paragraph (hh)(2) of 10 CFR Section 50.54, "Conditions of licenses," the NRC will be conducting an audit in conjunction with the ongoing audit of the mitigating strategies required by Order EA-12-049 (ADAMS Accession No. ML14058A105), and in accordance with NRC Office of Nuclear Reactor Regulation Instruction LIC-111, "Regulatory Audits" (ADAMS Accession No. ML082900195).

This document outlines the audit process that will be used from March 12-14, 2014.

If you have any questions, please contact me at 301-415-5430 or by e-mail at james.polickoski@nrc.gov.

Sincerely,



James Polickoski, Project Manager
Project Management Branch
Mitigating Strategies Directorate
Office of Nuclear Reactor Regulation

Docket No.: 50-391

Enclosures:

1. Documents Requested for Audit
2. Proposed Schedule
3. Audit plan

cc w/encl: Distribution via Listserv

ARRANGEMENTS/DOCUMENTS REQUESTED TO BE AVAILABLE ONSITE DURING AUDIT

All documents, drawings, records, etc., should be provided in hard copy.

1. Provide a conference room to accommodate up to four (4) NRC staff. Preferably this would be outside the protected area.
2. Site B.5.b contact person(s) should be available for the week.
3. B.5.b engineering persons(s) should be on call for questions about any engineering calculations.
4. Appropriate Operations staff should be available, as needed, for plant walkdowns throughout the week.
5. Modification packages for any plant modifications performed as a result of B.5.b.
6. Detailed drawings (e.g., P&IDs) of systems used to implement mitigating strategies
7. Copies of procedures/guidelines that were revised or generated to implement the mitigation strategies - these could be Extensive Damage Mitigation Guidelines,
8. Severe Accident Management Guidelines, Emergency Operating Procedures, Abnormal Operating Procedures , etc. This is the same as Item 1 to Enclosure 1, except that hard copies of these procedures/guidelines should be made available for each member of the audit team.
9. Copies of procedures used to inventory equipment used in the mitigation strategies (e.g., hoses, fittings, pumps, etc.).
10. Training records/ training matrix/ lesson plans related to B.5.b.
11. Copies of Memoranda of Understanding (MOUs) with local fire departments or other emergency services that are required to implement any mitigating strategies.
12. Copies of any evaluations performed to document that enough equipment is available to implement the mitigating strategies (e.g., enough fire hose or electrical cable is available based on a plant walkdown or review of drawings).
13. You are reminded to properly identify and handle all Official Use Only - Security-Related Information and/or Proprietary Information in accordance with current guidance.

Proposed Schedule

Onsite Day 1, Wednesday, March 12, 2014

- 0800 Check in at site; Badging
- 0900 Entrance meeting (with EA-12-049 Audit Team)
- 0930 TVA Presentation (with EA-12-049 Audit Team)
- 1230 Lunch
- 1330 NRC B.5.b. Audit Team Activities commence:
- Document review
 - Mitigating Strategies walk-throughs with licensee
- 1600 Joint Audit Team meeting
- 1630 Team lead daily debrief with licensee

Onsite Day 2, Thursday, March 13, 2014

- 0800 Check in at site; meet with Senior Resident/Resident
- 0900 NRC B.5.b Audit Team Activities:
- Continue document review
 - Continue Mitigating Strategy walk-throughs with licensee
- 1200 Lunch
- 1300 Continue NRC B.5.b Audit Team Activities
- 1530 Joint Audit Team meeting
- 1630 Observe EA-12-049 NRC/Licensee exit meeting

Onsite Day 3, Friday, March 14, 2014

- 0800 NRC B.5.b Audit Team Activities:
- Continue document review
 - Continue Mitigating Strategy walk-throughs with licensee
- 1200 B.5.b NRC/Licensee exit meeting

AUDIT PLAN FOR VERIFICATION OF SITE SPECIFIC IMPLEMENTATION

OF 10 CFR 50.54(hh)(2) PHASE 1, 2 and 3 MITIGATING STRATEGIES

AT WATTS BAR NUCLEAR PLANT, UNIT 2

OBJECTIVE

The objective of this Audit Plan is to confirm the implementation of the Mitigating Strategies required by Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.54(hh)(2) at Watts Bar Nuclear Plant (WBN), Unit 2.

BACKGROUND/REGULATORY AUDIT BASES

On February 25, 2002, the U.S. Nuclear Regulatory Commission (NRC) issued Order EA-02-026, "Order for Interim Safeguards and Security Compensatory Measures" (the ICM order) [Reference 1] which modified then-operating licenses for commercial power reactor facilities to require compliance with specified interim safeguards and security compensatory measures. Section B.5.b of the ICM order requires licensees to adopt mitigation strategies using readily available resources to maintain or restore core cooling, containment, and Spent Fuel Pool (SFP) cooling capabilities to cope with the loss of large areas of the facility due to large fires and explosions from any cause, including beyond-design-basis aircraft impacts. By letter dated February 25, 2005 [Reference 2], the NRC staff provided guidance for implementing Section B.5.b of the ICM order. This guidance is designated Safeguards Information (SGI) and is commonly referred to as the B.5.b Phase 1 Guidance.

Following issuance of the B.5.b Phase 1 Guidance, the NRC staff conducted inspections at operating reactor sites using Temporary Instruction (TI) 2515/164 (SGI) to gather information on actions taken in response to the February 25, 2005 guidance. The NRC staff then convened assessment panels to evaluate the adequacy of licensee actions taken to date. These assessment panels developed acceptance criteria to determine the adequacy of licensee responses to each of the 34 expectations identified in Attachment B to the B.5.b Phase 1 Guidance. On January 18 and 26, 2006, the NRC staff met with industry representatives and provided further clarifying information, including staff acceptance criteria on how licensees could meet Section B.5.b of the ICM order. The NRC clarifying information for acceptance of each expectation was disseminated in Section 05.02.c and 05.02.d of TI 2515/168 (SGI) [Reference 3]. This clarifying information represents acceptable methods, along with staff acceptance criteria, for satisfying the expectations. The staff used this clarifying information in developing its safety evaluation and inspection of current reactor licensee's compliance with Section B.5.b of the ICM order.

In December 2006, NEI issued NEI 06-12, Revision 2, "B.5.b Phase 2 & 3 Submittal Guideline" [Reference 4]. The NRC endorsed NEI 06-12, Revision 2, by letter dated December 22, 2006 [Reference 5] as an acceptable means for developing and implementing the mitigation strategies requirement in Section B.5.b of the ICM order. NEI 06-12, Revision 2 provides guidance for implementing a set of strategies intended to maintain or restore core cooling,

containment, and SFP cooling capabilities under the circumstances associated with the loss of a large area of the plant due to explosions or fire, in the following areas:

- Adding make-up water to the SFP
- Spraying water on the spent fuel
- Enhanced initial command and control activities for challenges to core cooling and containment
- Enhanced response strategies for challenges to core cooling and containment

The specific strategies covered in NEI 06-12, Revision 2 were developed based on the results of assessments conducted at currently licensed power reactor facilities for the purpose of enhancing plant specific mitigation capability for damage conditions caused by a large explosion or fire. These assessments identified a wide spectrum of potential plant specific strategies. NEI 06-12, Revision 2 specifies one set of strategies applicable to all pressurized-water reactors (PWR) and another set applicable to all boiling-water reactors (BWR). Both sets are derived from the results of the plant specific assessments.

The B.5.b Phase 1 Guidance and NEI 06-12, Revision 2 were used by each licensee in preparing information submitted to the NRC that describes a plant specific approach to implementing mitigating strategies and supports each plant specific license condition. The NRC staff has completed its review of the information submitted by each licensee, as well as information obtained during prior NRC inspections, and has issued a safety evaluation (SE) that documents the bases for its approval of the license condition for each facility [Reference 6]. The SE issued for each licensee includes regulatory guidance in Section 3.0 of Appendix A, "Phase 1 Assessment," that recites the generic B.5.b Phase 1 Guidance of Reference 2, as clarified in TI 2515/168, in a form that is designated Official Use Only – Security Related Information rather than SGI.

On March 27, 2009, the NRC amended 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," and Part 73, "Physical Protection of Plants and Materials," with new requirements published in the *Federal Register* dated March 27, 2009 (74 FR 13926) [Reference 7]. This rulemaking added paragraph (i) to 10 CFR 50.34, "Contents of applications; technical information," to require submittal of a "description and plans for implementation of the guidance and strategies intended to maintain or restore core cooling, containment, and SFP cooling capabilities under the circumstances associated with the loss of large areas of the plant due to explosions or fire as required by § 50.54(hh)(2) of this chapter." This rulemaking also added 10 CFR 50.54(hh)(2) in order to impose the same mitigating strategies requirements on new reactor applicants and licensees as those imposed by the ICM order and associated license conditions.

AUDIT REQUIREMENTS

General

Verify that the commitments for implementing the 10 CFR 50.54(hh)(2) mitigating strategies have been completed by the applicant/licensee. These commitments are delineated in the site specific submittals. The NRC staff's understanding of these commitments will be documented in the SE. Additional information on these strategies may be found in References 2, 3, and 4. For ease and consistency of reference, the guidance that follows includes references to the paragraph numbers used in References 2 and 4.

Specific

Phase 1 strategies are listed in Table 1 below. Phase 2 and 3 strategies are listed in Table 2, keyed to the table numbers for the strategies in Reference 4. Review of all strategies is required to complete this audit. However, the auditors are not required to address all of the specific guidance elements (A, B, C, etc.) listed in Appendices B and C for each strategy. Rather, the auditors may choose to review a sample of those specific guidance elements. If based on this sample review the auditor concludes that the strategy has been implemented successfully, it is not necessary to review the remaining specific guidance elements for that strategy.

#	<u>TABLE 1 PHASE 1</u> <u>STRATEGY TITLE</u>
B.1.a	Staging of Fire Brigade Equipment
B.1.b & B.2.a	Dispersal of Personnel
B.1.c	Airlifted Resources
B.1.d	Command and Control
B.1.e	Evaluating Capabilities of Offsite Resources
B.1.f	Evaluation of MOUs for Offsite Resources
B.1.g	Coordination with Regional Resources
B.1.h	Controlling Emergency Response Vehicles and Dosimetry for Responders
B.1.i	Communications Equipment (firefighting response)
B.1.j	Mass Casualties
B.1.k	Triage Areas
B.1.l	Firefighting Training and Exercises
B.1.m	Means for Feeding the Fire Protection Ring Header
B.2.b	Communications Equipment (operational recovery of the plant)
B.2.e	Best Practices for BWRs: Containment Venting and Vessel Flooding (N/A for WBN 2)
B.2.g	Use of Plant Equipment During Loss of Power Situations
B.2.h	Compartmentalization
B.2.m	Spent Fuel Pool Mitigative Measures

#	TABLE 1 PHASE 1 STRATEGY TITLE
B.2.n	Training
B.3.a	Water Spray Scrubbing and Runoff
B.3.b	Staging of Equipment for Water Spray Scrubbing

#	TABLE 2 PWR STRATEGY TITLE
2.2	SFP Internal Makeup (Table A.2-1)
2.3.1	SFP External Makeup (Table A.2-2)
2.3.2	SFP External Spray (Table A.2-3)
2.4	Additional Site Specific SFP Makeup Strategies (Table A.2-4)
2.5	SFP Leakage Control Strategies (Table A.2-5)
3.2.2	Off-Site and On-Site Communications (Table A.3-1)
3.2.3	Notifications/ERO Activation (Table A.3-1)
3.2.4	Initial Operational Response Actions (Table A.3-1)
3.2.5	Initial Damage Assessment (Table A.3-1)
3.3.1	Makeup to RWST (Table A.4-1)
3.3.2	Manually Depressurize Steam Generators (Table A.4-2)
3.3.3	Manual Operation of Turbine/Diesel AFW Pump (Table A.4-3)
3.3.4	Manually Depressurize Steam Generators & Use Portable Pump (Table A.4-4)
3.3.5	Makeup to Condensate Storage Tank/Auxiliary Feedwater Storage Tank (Table A.4-5)
3.3.6	Containment Flooding With Portable Pump (Table A.4-6)
3.3.7	Portable Sprays (Table A.4-7)
3.5	Disposition of Site Specific Enhancement Strategies (Table A.6-1)

General Guidance

Review the site specific submittal(s) and references to identify the commitments that were made to implement each mitigating strategy. Since some of these commitments were made before procedures or equipment purchases were finalized, it is possible that the implementing details are different from those that were reviewed and documented in the SE. This may be acceptable if the capability, intent and function of the strategy, as outlined in the references, are maintained and the commitment change is made in accordance with the licensee's commitment management program (NEI 99-04, or NRR Office Letter 900 "Managing Commitments Made by Licensee to NRC (ADAMS Accession No. ML003692416, Not Publicly Available)). Where the applicant/licensee has altered the commitment from that in the SE, the auditor must verify that the altered strategy provides the same capability, intent and function of the strategy as described in the references. Additional general guidance and definitions are provided in Appendix A.

Specific Guidance

Through discussions with plant staff, review of documentation and plant walk downs where appropriate, verify that the strategies have been implemented by the applicant/licensee as stated in their submittal(s). Appendix B provides detailed specific guidance elements for each of the Phase 1 strategies. Appendix C provides detailed specific guidance elements for each of the SFP, Command and Control, PWR Phase 2 and 3 strategies. Review of all strategies is required to complete this audit. However, the auditors are not required to address all of the specific guidance elements (A, B, C, etc.) listed in Appendices B and C for each strategy. Rather, the auditors may choose to review a sample of those specific guidance elements. If based on this sample review the auditor concludes that the strategy has been implemented successfully, it is not necessary to review the remaining specific guidance elements for that strategy.

TEAM ASSIGNMENTS

Audit Leader: Eric Bowman, Special Advisor, NRR/MSD

Audit Team Members: Adam Wilson, Construction Inspector, RII/DCP/CPB3
James Polickoski, Project Manager, NRR/MSD/MSPB

REPORTING REQUIREMENTS

At a minimum, the auditors shall briefly describe the areas reviewed, audit observations and results in a written report to be issued within 45 days of audit completion. The classification of the report details will be "Official Use Only-Security Related Information." None of the report documentation is expected to be Safeguards Information (SGI). The cover letter will be publicly available with all the OOU-SRI contained in an enclosure.

REFERENCES

1. Collins, Samuel J., "Issuance of Order for Interim Safeguards and Security Compensatory Measures for – Watts Bar Nuclear Plant, Unit 1," NRC letter forwarding the ICM Order applicable to WBN Unit 1, , February 25, 2002 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML020510344).
2. Dyer, James E., "NRC Staff Guidance for Use in Achieving Satisfactory Compliance with February 25, 2002, Order Section B.5.b," NRC letter forwarding B.5.b Phase 1 Guidance to holders of licenses for then-operating power reactors, designated SGI, February 25, 2005.
3. NRC TI 2515/168, "Closeout Inspection of Nuclear Reactor Safeguards Interim Compensatory Measures – Section B.5.b Plant Mitigating Strategies to Address Loss of Large Areas of the Plant due to Explosion or Fire," May 2006.

4. Pietrangelo, Anthony R. (NEI), "NEI 06-12, Revision 2, B.5.b Phases 2 & 3 Submittal Guideline," designated Official Use Only – Security Related Information, December 14, 2006.
5. Dyer, James E., NRC letter endorsing NEI 06-12, designated Official Use Only – Security Related Information, December 22, 2006.
6. Moroney, Brendan T., "Watts Bar Nuclear Plant, Unit 1 – Conforming License Amendment to Incorporate the Mitigation Strategies Required by Section B.5.b of Commission Order EA-02-026 and the Radiological Protection Mitigation Strategies Required by Commission Order EA-06-137 (TAC No. MD4621)," NRC letter forwarding the safety evaluation and license conditions applicable to WBN 1, August 9, 2007 (ADAMS Accession No. ML072200034).
7. U.S. Nuclear Regulatory Commission, "Power Reactor Security Requirements; Final Rule, Published in the *Federal Register*" (74 FR 13926), March 27, 2009.
8. NRR Office Instruction LIC-111, "Regulatory Audits," December 29, 2008 (ADAMS Accession No. ML082900195).

APPENDICES:

- A. General Guidance and Definitions
- B. Specific Guidance for Phase 1 Strategies
- C. Specific Guidance for Phase 2 and 3 Strategies

APPENDIX A - GENERAL GUIDANCE AND DEFINITIONS

Purpose: This appendix provides additional general guidance and definitions that apply to the audit of all specific strategies.

1. **ENGINEERING BASIS FOR FLOW:** Many strategies are intended to provide makeup or spray water at a specified flow rate for a specified period of time. For some strategies, this was an assumed flow rate that had not been fully evaluated at the time the response was submitted to the NRC. NEI 06-12, states: "The site should have an engineering basis that provides reasonable assurance that the intended makeup rate and capacities can be provided. This basis should be auditable, but does not have to be a quality related calculation." The auditor should review the engineering bases for the strategies to verify that the intended makeup flow and capacities can be provided with the equipment specified in the strategy. Factors that can affect the ability to provide the specified flow for the required period of time include the following:
 - a. Pump design output performance (flow/pressure) characteristics.
 - b. Line losses due to hose size, coupling size, and hose length.
 - c. Head losses due to elevation changes, especially for spray strategies.
 - d. Back pressure when injecting into closed/pressurized spaces (e.g., containment, steam generators).
 - e. Capacity of the suction sources (CST/RWST/Circulating Water Basin/fire main/City Water Supply/Lake/River, etc.) to provide an adequate supply (12 hours for many strategies) for the pumps (fire engines, portable pumps, Fire Protection System Pumps, etc.)
 - f. Potential detrimental impact on water supply source or output pressure when using the same source or permanently installed pump(s) for both makeup and firefighting.
 - g. Availability of sufficient supply of fuel onsite to operate diesel powered pumps for the required period of time (typically 12 hours).
 - h. Availability of an adequate and reliable source of electrical power to operate electric powered pumps for the required period of time (typically 12 hours).
 - i. Potential clogging of pumps, valves or hoses from debris or ice when using rivers, lakes, ocean or cooling tower basins as a water supply.
2. **FIRE SYSTEM MANAGEMENT STRATEGIES (Table A.2-6).** The site Fire Protection System is relied upon for implementation of many of the SFP strategies and the Reactor/Containment strategies. The information provided in Table A.2-6 discusses attributes of the site Fire System including isolation of damaged portions of the system and prioritization of response actions. It also may describe pump capacities and sources of water that are necessary to support the SFP and Reactor/Containment strategies. This Fire Protection System information is intended to supplement the information provided for each of the strategies. For any strategy that relies on the Fire Protection System, the auditor should consider if the information provided in the specific strategy,

or in Table A.2-6, or in any associated implementing procedures, adequately addresses considerations for sharing and balancing fire systems resources.

3. **STORING (STAGING) EQUIPMENT:** Portable equipment needed to implement many strategies is required to be stored in a location that would be presumed to survive in the event of a potential large fire or explosion, generally at least 100 yards from the potential damage area (i.e., SFP for Phase 2 strategies or potential damage areas, e.g., the Reactor, Containment, Auxiliary Building, for Phase 3 strategies). However, there are exceptions which are noted in the specific guidance for individual strategies. Some licensees have opted to store equipment in multiple locations to increase survivability and reduce response time. Some strategies allow storing of portable equipment adjacent to where it will be used, as NEI 06-12 assumes that these areas will be accessible. The auditor should do a plant walk down to verify that portable equipment has been stored as stated in the strategy. The types of portable equipment can include the following:
 - a. Portable pumps
 - b. Fire Engines
 - c. Fire hoses and couplings
 - d. Fire hose tie-offs or clamping devices
 - e. Hose adaptors
 - f. Spray or monitor nozzles
 - g. Valve/hydrant tools
 - h. Portable power supplies
 - i. Cabling
 - j. Tooling needed to implement strategy
4. **PLANT MODIFICATIONS:** Some strategies may involve the installation of plant modifications. These modifications may include addition of adaptors to allow attachment of fire hoses and jumpers to facilitate connection to plant equipment. These modifications are identified in the licensee's submittal(s) and the SER. Auditors should verify by review of plant documentation or plant walk downs that the modifications have been completed. If the licensee has changed their original strategy such that the modification is no longer required, the auditor should verify that the alternative strategy is addressed in the commitment tracking program and provides the same capability, intent and function as the original strategy.
5. **IMPLEMENTING PROCEDURES AND GUIDANCE:** Most strategies require that new procedures or guidance be developed, or that existing procedures or guidance be revised, in order to implement the strategies. The auditor should review the appropriate documentation to verify that appropriate procedures and guidance have been developed or revised to implement these strategies. If a strategy relies on an existing procedure, verify that the licensee has evaluated the procedure for applicability to the potential conditions (e.g., can it work in a potential loss of internal power distribution (LIPD) condition, does it rely on equipment that may not be available).

6. **TRAINING OF PERSONNEL:** Most strategies require that training be provided to appropriate licensee staff. Generally, the level of training is expected to be consistent with Severe Accident Management Guidelines (SAMG)-type actions. The auditor should verify through discussions with licensee staff and review of training records that training has been provided on the implementing procedures and guidance used for these strategies.
7. **FEASIBILITY OF STRATEGY:** For a sample of strategies, the auditor should review with licensee representatives any engineering evaluations, testing, or training exercises performed by the licensees to demonstrate the feasibility of the strategy. The auditor should also verify by walk through of the proposed strategy with knowledgeable licensee staff that the strategy appears to be feasible. The walk through should include accessible areas of the plant and should evaluate whether the required plant equipment will be accessible given the potential conditions assumed for the strategy and that required portable equipment (pumps, hoses, adapters, ladders, jumpers, etc.) can be moved to the required location and placed in service. For strategies with time constraints, the auditor should also verify that the licensee has established a basis for the determination that the strategy can be implemented within the time allowed.
8. **COMPATIBILITY OF EQUIPMENT:** Many strategies require connecting portable equipment such as fire hoses or electrical devices that may not have been connected or tested in the configuration proposed for the strategy. They might also require connections between onsite and offsite (e.g., fire departments) equipment that have not been verified. The auditor should verify that the licensee has confirmed by engineering evaluation or a demonstration that hoses can be connected to each other and to pumps, adapters, and fittings; that electrical cables, connectors, and jumpers are compatible; and, that fire hoses and nozzles can be attached to lifting devices and/or secured in place as needed for the strategy.
9. **LOSS OF INTERNAL POWER DISTRIBUTION:** Many strategies assume a LIPD. For purposes of the B.5.b reviews an LIPD means that no onsite or offsite alternating current (AC) or direct current (DC) power is available from existing normal or emergency power systems. However, it is assumed that portable power supplies such as batteries or AC/DC power supplies may be available.
10. **MAINTENANCE AND TESTING OF EQUIPMENT:** Equipment required to implement these strategies must be maintained and periodically tested to ensure it will be operate when called upon. Installed plant equipment (reactor core isolation cooling, auxiliary feedwater, Fire Protection Systems, Tanks, etc.) with established maintenance and testing requirements may not need additional requirements. However, if these systems are modified to accommodate the strategies (e.g., adding fire hose connections) then licensees are expected to confirm that existing maintenance and testing are adequate. Any new fire pumps, hoses, nozzles purchased for these strategies are also expected to be maintained and tested. NEI 06-12 states that "Equipment associated with (the external SFP spray strategies) will meet industry practices for procuring and maintaining commercial equipment." The staff considers this to be the minimum for any equipment

required for the B.5.b strategies. Other tools, adaptors, wrenches, jumpers, etc, that do not require maintenance or testing should, at a minimum, be stored in an accessible location and periodically inventoried to ensure that the equipment is available when needed. Although it is permissible for equipment to be taken out of service for routine maintenance activities, appropriate licensee personnel should be made aware when a lack of replacement parts, or other maintenance issues, cause B.5.b equipment to be unavailable for extended periods of time and therefore not available to support the response strategies.

APPENDIX B – PHASE 1 SPECIFIC GUIDANCE

Purpose: This appendix provides specific guidance for each of the Phase 1 strategies, keyed to the expectation numbers in Reference 2. The auditor should refer to this guidance for each of the strategies selected for audit. Review of all strategies is necessary to complete this audit. However, the auditors are not required to address all of the specific guidance elements (A, B, C, etc.) listed for each strategy. Rather the auditors may choose to review a sample those specific guidance elements. If based on this sample review the auditor concludes that the strategy has been implemented successfully, it is not necessary to review the remaining specific guidance elements for that strategy.

B.1.a Staging of Fire Brigade Equipment

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that the applicant/licensee has staged appropriate fire brigade equipment (i.e., enough turnout gear, self-contained breathing apparatus (SCBA), and radios to equip a typical 5 person fire brigade) in a location at least 100 yards from the target areas. Target areas include containments, reactor buildings, auxiliary buildings, control buildings, and turbine buildings. If 100 yards is not achievable, a lesser distance may be acceptable if that location is either hardened or if there is an intervening structure or equipment is stored at a number of diverse locations at the site providing sufficient assurance that equipment would be available to support fire brigade response.

B.1.b and B.2.a Dispersal of Personnel

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. For aircraft imminent threat, verify that the applicant/licensee has implemented guidance to evacuate personnel from target buildings (for a ground threat, sheltering personnel may be a more viable strategy and is not intended to be addressed by these elements). Personnel need to be warned to move rapidly from most likely target buildings to buildings less likely to be a target. Generically, sheltering in place is not an acceptable solution. If the applicant/licensee has a valid reason and can justify a safe shelter area in a target building, then sheltering in place may be an appropriate action if evacuation from target buildings is not feasible. Some licensees have committed to "maximizing survivability" by dispersing operations and fire brigade members to locations that are sufficiently distant from each other (e.g., opposite ends of the turbine building or opposite sides of the containment structure), but still located in target buildings. This approach is acceptable provided that dispersing personnel outside of the target areas was not achievable.

- B. For element B.1.b, verify that the applicant/licensee has implemented guidance that meets the NRC expectation that fire brigade members be dispersed to locations at least 100 yards from target buildings, even during imminent threat conditions. This location could be an area that has pre-staged firefighting equipment (turnout gear, SCBAs, radios) as identified in element B.1.a. If 100 yards is not achievable, a lesser distance is acceptable if that location is either hardened or if there is an intervening structure. Fire brigade members should not report to a location in target buildings to gather equipment before reporting to the designated dispersal area.
- C. For element B.2.a, verify that the applicant/licensee has implemented guidance that meets the NRC expectation that operations and support staff members be dispersed away from target buildings at least 100 yards. The NRC recognizes that a minimum number of operators is required in the control room. Any operators not required to be in the control room to implement imminent threat procedures should be dispersed to safe locations.

B.1.c Airlifted Resources

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that the applicant/licensee has looked for airlifted resources using a 2-hour total response criterion (2 hours from door to door). Resources may be acquired via existing mutual aid agreements so long as the licensee is aware of what resources are available via this system and how those resources are activated. Airlifted resources may include helicopter/fixed-wing transport for personnel/equipment, securing airfields for takeoff/landing, and helicopter water drop capability. Also, there is an expectation that licensees evaluated the use of airlifted resources and documented these resources, if any, in their mitigation strategy documents. Where possible, Memoranda of Understanding (MOUs) should have been established; however, when an MOU was not possible, a verbal agreement as a minimum should be documented in site procedures.

B.1.d Command and Control

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that the applicant/licensee has proceduralized protocols for command and control for an event that is of the magnitude of an event and included protocols/strategies for interface with offsite responders. Furthermore, licensees are expected to maintain command and control authority for onsite firefighting actions to ensure that firefighting priorities, as defined by operations, are communicated to the incident commander. Licensees are expected to have means for providing immediate technical assistance (i.e., a licensed operator) to the incident commander. In cases where state law prevents

the licensee from being in charge of the onsite firefighting actions, the licensee should have a means to ensure that the firefighting priority is to support plant recovery efforts. Command and control related to onsite mitigative response is addressed in the Phase 2 and 3 assessments.

B. 1.e Evaluating Capabilities of Offsite Resources

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that the applicant/licensee has evaluated the capabilities of mutual aid or other local/regional resources that could be available to respond to the plant, including what equipment might be brought to bear during an event. Specifically, this element refers to "specialized capabilities". Specialized capabilities include but are not limited to debris removal equipment (bulldozers, large cranes, etc.), specialized firefighting equipment (AFFF), and hazmat response equipment.
- B. In conjunction with B.1.c and B.1.g, verify that the applicant/licensee has documented these capabilities in site strategies/procedures.

B. 1.f Evaluation of MOUs for Offsite Resources

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that the applicant/licensee has evaluated existing MOUs with offsite response organizations to ensure adequacy during an event and identified equipment that would be available during an event. Roles and responsibilities should be consistent with element B.1.d with regard to the licensee maintaining overall command and control of onsite actions.

B.1.g Coordination with Regional Resources

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that the applicant/licensee has looked for ground-based regional resources using a 2-hour total response criterion (2 hours from door to door). Resources may be acquired via existing mutual aid agreements, including county or state emergency response arrangements, so long as the licensee is aware of what resources are available via this system and how those resources are activated. Municipal fire departments, military facilities, airports (crash trucks), and large industrial facilities (i.e., petrochemical) should have been evaluated to determine what level of heavy firefighting resources might be available.

- B. Verify that the applicant/licensee has established MOUs where possible, however, when an MOU was not possible, a verbal agreement also yields confidence that resources would be available to respond when called upon and is acceptable.
- C. Verify that the applicant/licensee has evaluated the availability and use of these resources and documented these resources, if any, in their mitigation strategy documents.

B.1.h Controlling Emergency Response Vehicles and Dosimetry for Responders

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that the applicant/licensee has established and documented in procedures staging areas for large numbers of responding vehicles.
- B. Verify that the applicant/licensee has made provisions with the Local Law Enforcement Agency (LLEA) to ensure that responding vehicles (firefighting, plant personnel, etc.) are not restricted at roadblocks and prevented from accessing the site. Those provisions should be documented in plant security procedures.
- C. Verify that the applicant/licensee has provided general site familiarization (overall layout of site, access points, staging areas, etc.) to LLEA personnel.
- D. Verify that the applicant/licensee has sufficient dosimetry staged and available for initial arriving offsite response personnel. This dosimetry should be staged in a location at least 100 yards from target areas. The appropriate number of dosimetry is expected to be performance-based. The applicant/licensee should have an estimate of the number of responders (those who do not normally carry dosimetry with them) that are expected to arrive onsite during the initial stages of an event and provide enough dosimetry for those individuals. It is expected that the applicant/licensee could acquire/relocate additional dosimetry for longer-term arriving assets.

B.1.i and B.2.b Communications Equipment

- A. For B.1.i, the focus is on radios for firefighting response. Verify through discussions with plant staff, review of documentation and plant walk downs where appropriate that the applicant/licensee has addressed the issue of interoperability of radios by either pairing site personnel holding site radios with offsite responders or having radios that are interoperable by nature. The appropriate number of radios should be performance-based, predicated on a licensee's evaluation of the number of radios needed to support firefighting responders expected to be involved during a 10 CFR 50.54(hh)(2) event and the method they use to distribute these radios. That number of radios (with associated

batteries and chargers) is to be provided in a location at least 100 yards from the power block.

- B. For B.2.b, the focus is on radios used for operational recovery of the plant (similar to those that are used in the operational support center (OSC)). The appropriate number of radios should be performance-based, predicated on a licensee's evaluation of the number of radios needed to support operational recovery teams (such as those that would normally operate from the OSC) expected to be involved during an event. Through discussions with plant staff, review of documentation and plant walk downs where appropriate:
 - a. Verify that the applicant/licensee has provided that number of radios (with associated batteries and chargers) in a location at least 100 yards from the power block.
 - b. Verify that the applicant/licensee has established a communications scheme, using multiple radio channels, to minimize crosstalk and confusion during an event.
- C. Through discussions with plant staff, review of documentation and plant walk downs where appropriate, verify that radios for B.1.i and B.2.b are not the same radios. They may be stored in the same location; however, these radios may all need to be in service simultaneously and cannot be shared. Credit should be given to licensee mitigation strategies that provide for augmentation of radios from offsite resources.

B.1.j Mass Casualties

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that the applicant/licensee has addressed the handling of a mass casualty situation in site procedures. It is important that the applicant/licensee has pre-planned for an event of mass casualties (an event beyond the typical contaminated injured individual medical emergency). It is acceptable for the applicant/licensee to rely on county or state mass casualty plans, so long as the site plans reference the framework of those offsite procedures. If the applicant/licensee does not utilize a state or county mass casualty plan, then the applicant/licensee needs to ensure that adequate medical capabilities exist using their existing medical mutual aid/MOU response framework. Additional regional medical resources may need to be sought. The NRC staff does not expect the applicant/licensee to have the medical expertise or equipment onsite to treat casualties, rather, the applicant/licensee need only to provide for their care until offsite expertise and equipment arrives.

B.1.k Triage Areas

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that the applicant/licensee has documented in a plant procedure or guidance document an alternate assembly areas for triage. The area should be in an appropriate location(s) and of sufficient size. The NRC staff does not expect licensees to have the medical expertise or equipment onsite to treat casualties, rather, licensees need only to provide for their care until offsite expertise and equipment arrives.
- B. Verify that the documented location is at least 100 yards from target areas. The area could be indoors or outdoors (although indoors is preferred due to weather uncertainty), as long as there is sufficient area to hold a large number of injured individuals (approximately 30 to 50). A good practice that some licensees identified is to locate a triage area near an area capable of supporting helicopter landing. Multiple triage areas are acceptable if the applicant/licensee wants to decide which to use during the event due to radiological conditions as long as these areas and the decision process detailing which to use is captured in procedures or guidance documents.

It is acceptable for the applicant/licensee to note in their procedure or guidance document that although preplanned triage areas are defined in the plant documents, the incident commander may choose to locate the triage area at a previously undefined location. This is the prerogative of the incident commander. In this case, the applicant/licensee's preplanned areas provide options to the incident commander.

B.1.l Firefighting Training and Exercises

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that the applicant/licensee has planned to provide firefighting training on accelerant-fed fire to onsite fire brigade members.
- B. Verify that fire brigade training addresses the coordinated fire response between onsite and offsite fire responders (including interface with operations).
- C. Verify that the applicant/licensee provides site familiarization training to local offsite responders and, if possible uses this as an opportunity to share information with offsite responders about 10 CFR 50.54(hh)(2) event related mitigation strategies and measures.

- D. Verify that the applicant/licensee has conducted an exercise or tabletop involving, at a minimum, MOU fire responders, site fire brigade, and operations staff to enhance the understanding of the coordinated response strategies for a 10 CFR 50.54(hh)(2) event. The tabletop exercise could have been held onsite or offsite and should also have focused on the coordinated response strategies involving onsite and offsite responders for such an event.

B.1.m Means for Feeding the Fire Protection Ring Header

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that the applicant/licensee has developed a means to feed the fire protection ring header using alternate water supplies with either appropriately staged onsite equipment or arriving offsite equipment. This means should be either documented in site procedures or have been demonstrated by the appropriate fire responders.

B.2.g Use of Plant Equipment During Loss of Power Situations

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that the applicant/licensee has developed procedures to start an emergency diesel generator without dc power, development of procedures to start RCIC or auxiliary fresh water (AFW) pumps without dc power.
- B. Verify that the applicant/licensee has developed procedures to use a fire pumper to supply cooling water to the spent fuel pool. Use of a portable generator and transformer was deferred to the Phase 3 assessment.

B.2.h Compartmentalization

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that the applicant/licensee has have performed an analysis or walkdown of target areas with a 10 CFR 50.54(hh)(2) event in mind and documented the results. The primary consideration during this walkdown is accelerant fluid flow. Any feasible compartmentalization enhancements should be implemented so long as they do not impact other barrier programs (i.e., HELB, fire protection). Some examples of enhancements may include sealing of floor plugs, expedited closure of floor plugs, enhanced fire door closing mechanisms, flood berms, and closing of tornado hatches.

B.2.m Spent Fuel Pool Mitigative Measures

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. For B.2.m.1, verify that the applicant/licensee has included the concept in procedures from the NRC letter dated March 16, 2006 (Official Use Only – Security Related).
- B. For B.2.m.2, verify that the applicant/licensee has proceduralized a restriction to ensure that hot fuel is not placed over SFP rack feet.
- C. For B.2.m.3, verify that the applicant/licensee has proceduralized a restriction to ensure that a contiguous area is established in the SFP to support the downcomer effect. This space may be limited by SFP loading issues (such as space, criticality, tech spec issues, and boraflex degradation). The downcomer area should be maximized based on limiting conditions in the pool.

B.2.n Training

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that the applicant/licensee has incorporated training (preferably classroom training) into the initial licensed operator training program as well as their licensed operator requalification program (LOI and LOR) on 10 CFR 50.54(hh)(2) procedures and strategies.
- B. Verify that the applicant/licensee has incorporated training for the appropriate emergency response organization (ERO) personnel, as determined by a training needs analysis, in addition to operators (licensed and non-licensed).

B.3.a Water Spray Scrubbing and Runoff

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that the applicant/licensee has developed procedures or guidance describing water spray scrubbing using either onsite equipment or arriving offsite equipment.
- B. Verify that enhancements to the containment of runoff are included in the applicant/licensee's guidance or procedures if they are achievable. Spray scrubbing uses large volumes of water and could last for days; therefore, containment of potentially

contaminated runoff is also of concern. Depending on site topography, containment of runoff may not be readily achievable, which is acceptable.

B.3.b Staging of Equipment for Water Spray Scrubbing

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that, if the applicant/licensee has developed a strategy for water spray scrubbing that relies upon onsite equipment; the equipment is stored in an appropriate location at least 100 yards from the target areas. If the applicant/licensee solely relies on offsite equipment for water spray scrubbing, then this element is not applicable.

APPENDIX C – PHASE 2 AND 3 SPECIFIC GUIDANCE

Purpose: This appendix provides specific guidance for each of the SFP, Command and Control, PWR and BWR strategies. The auditor should refer to this guidance for each of the strategies selected for audit. Review of all strategies is necessary to complete this audit. However, the auditors are not required to address all of the specific guidance elements (A, B, C, etc.) listed in Appendix B for each strategy. Rather the auditors may choose to review a sample those specific guidance elements. If based on this sample review the auditor concludes that the strategy has been implemented successfully, it is not necessary to review the remaining specific guidance elements for that strategy.

2.0 SPENT FUEL POOL STRATEGIES.

2.2 SFP Internal Makeup (Table A.2-1). This strategy requires a diverse means of SFP makeup with at least a concurrent makeup capability of 500 gpm beyond the normal SFP makeup capability.

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that an engineering basis has been established which provides reasonable assurance that the intended 500 gpm makeup beyond the normal makeup capability can be provided. Also verify that the capacities of the water supplies are as stated in the strategy. The total concurrent makeup capability can be accomplished with multiple systems, but all must be diverse from the normal makeup system.
- B. Verify that the proposed strategy is diverse and does not rely upon any of the same components or piping as the normal makeup system and that the strategy does not rely on any power supplies in the same building as the SFP.
- C. Verify that the strategy is feasible and can be accomplished with the plant conditions that may exist. There is no specific time limit for implementing this strategy (unlike the SFP external strategies). For the purposes of this strategy it is acceptable to use makeup connections that would require access to areas around the spent fuel pool, including the SFP deck area.
- D. Verify through a walk down of accessible areas of the plant that any equipment required to implement this strategy has been identified and stored in the location specified in the strategy. If flexible hoses are relied upon then some means to secure the hoses is required to ensure that the water is delivered into the SFP, e.g., tie-downs, clamps, or unmanned nozzles.
- E. Verify that the specified equipment connection devices and fittings are compatible with plant fittings.
- F. Verify that guidance for implementing this strategy has been incorporated into plant procedures or guidelines. Steps may be general in nature, consistent with the need for flexibility in deployment.

- G. Verify that training has been provided on implementing procedures/guidance. The level of training is expected to be consistent with SAMG-type actions and consistent with utility commitments made to meet the Phase 1 requirements.
- H. Verify any items identified in the Safety Evaluation (SE) as candidates for onsite audit have been resolved.

2.3.1 SFP External Makeup (Table A.2-2). Establish a flexible means of SFP makeup of at least 500 gpm using a portable, power independent pumping capability (e.g., a pumper truck or portable pump). This flow rate is required to the SFP of a single unit site, to the shared SFP of a dual unit site, or to either SFP (but not both simultaneously) of a dual unit site with separate SFPs. The water makeup capability will be employed by connecting hoses to the discharge of a portable pump and manually routing the hoses to the spent fuel pool.

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that an engineering basis has been established which provides reasonable assurance that a flow rate of 500 gpm can be maintained to the SFP for 12 hours using the equipment specified for the strategy.
- B. Verify that the strategy is capable of being deployed within 2 hours from the time it is determined external SFP makeup is required.
- C. Verify that the strategy uses an independent pumper truck or portable pump and does not rely upon any installed piping (such as fire protection system standpipes) or power supplies in the SFP building. However, the strategy may use portions of the fire protection system external to the SFP building as a source of water for the portable pump. Some plants may initially utilize the external fire header and hoses to immediately supply water to the SFP because it could be implemented more quickly. However, an independent pumper truck or portable pump is still required to be available for this strategy.
- D. Verify that some reliable method to pressurize the fire protection header is available (where the fire protection header is relied upon to implement this strategy). This could be the installed diesel powered fire pump, independent electrical power sources for electrically powered fire pumps, use of fire protection system from another unit or from offsite sources such as municipal/city/county fire mains. The pump used to charge the fire header should be located approximately 100 yards from the target area, or if not, then it should be protected by intervening structure(s) or located in a reinforced concrete structure to justify pump survivability. In all cases the supply should be capable of supplying the required flow with the conditions assumed for this strategy.

- E. Verify that the water source for this strategy is sufficient to provide the anticipated flow for at least 12 hours (500 gpm for 12 hours requires 360,000 gallons).
- F. Verify that a 12-hour supply of fuel is stored onsite for the diesel (or gasoline) powered portable pump, if used, or that jumper cables are available if an electric powered portable pump is used. If the portable pump is AC powered using jumper cables from an on-site emergency power source, verify the emergency power source is spatially separated from the vicinity of the SFP.
- G. Verify that if portions of the external fire protection system ring header are relied upon to implement this strategy, the procedure or guideline requires that connections to the ring header be approximately 100 yards from the SFP and should address methods to isolate potentially damaged headers.
- H. Verify (by plant walk downs) that the portable pump and other equipment required to implement this strategy are stored onsite more than 100 yards away from the SFP.
- I. Verify that sufficient length of hose (or multiple hoses) is available to allow makeup from a source more than 100 yards from the damage area, via each accessible side of the structure containing the SFP. Verify a means to secure the hoses (e.g., tie downs or unmanned nozzles) will be available at, or near, the SFP to ensure the hose directs the water into the SFP. Connecting devices, hoses, nozzles and tie-downs that will be used in the vicinity of the SFP can be stored on the spent fuel pool deck or in adjacent stairwells.
- J. Verify that the specified equipment connection devices and fittings are compatible with plant fittings.
- K. Verify that guidance for implementing this strategy has been incorporated into plant procedures or documents. The implementing guidance for this strategy must include steps to assist the applicant/licensee staff in determining whether use of the external makeup strategy or external spray strategy is appropriate.
- L. Verify training has been provided on implementing procedures/guidance. The level of training is expected to be consistent with SAMG-type actions and consistent with utility commitments made to meet the Phase 1 requirements.
- M. Verify any items identified in the SE as candidates for onsite audit have been resolved.

2.3.2 SFP External Spray (Table A.2-3). Establish a flexible means of providing spray to the SFP using a portable, power-independent pumping capability. The required spray flow rate is specified in the SE (200 gpm for a single-unit site; 400 gpm for a dual unit site with shared SFP; and 200 gpm into any one SFP for a multi-unit site with spatially separate SFPs). Other site specific variables that were considered by the NRC staff in evaluating the adequacy of the spray strategy included: fuel building structure; presence or absence of intervening structures and the

configuration of the fuel building in relation to any intervening structures; the height of the active fuel relative to grade level; ease of access to the SFP; the applicant/licensee's fuel dispersal strategy; the incorporation of additional makeup strategies; and, the actual implementation details of the spray strategy. The auditor should refer to the SE to determine which of the following audit verification steps are applicable.

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that an engineering basis has been established which provides reasonable assurance that the required minimum effective spray flow rate (200 gpm or 400 gpm) can be provided to the SFP for 12 hours using the equipment specified for the strategy. The applicant/licensee should perform a site specific assessment of the number of spray nozzles and their locations in order to assure that the required minimum spray flow rate is reaching the SFP and that the entire SFP is sprayed. Since some spray may not enter the SFP, the nozzle flow rate may have to be much larger than the minimum effective spray rate.
 1. Adjusting the spray nozzle to direct a narrow stream of spray to the center of the SFP would maximize the amount of the spray entering the pool and minimize the amount of spray which is spilled outside of the pool. However, that would not ensure that the fuel bundles at the periphery of the SFP are sprayed. Using a broader spray pattern or an oscillating nozzle to ensure the entire SFP is sprayed would also result in more spillage outside the SFP. The auditors should use the following guidance to determine if both requirements of the strategy are met:
 - a. A spray nozzle flow of 250 gpm total (calculated or demonstrated by testing) for a single unit pool (500 gpm for a dual unit pool) should be sufficient to reasonably assure that 200(400) gpm is reaching the SFP. The spray pattern must be adjusted to reasonably assure that all fuel assemblies are wetted by the spray. This could be accomplished by using a fixed nozzle adjusted to a wide fan pattern. It could also be accomplished by using an oscillating nozzle adjusted in a pattern which intermittently (but not necessarily continuously) wets all areas of the SFP. A lower nozzle flow rate may be acceptable if the applicant/licensee has established an engineering basis that this lower nozzle flow rate will provide 200 gpm spray per unit effective to the SFP and that the entire SFP is sprayed.
 - b. This strategy requires a site specific assessment of the number of spray nozzles and their locations be performed which takes into account any equipment or structures that could prevent spraying of the entire SFP. These could include the refueling bridge, foreign material exclusion (FME) barriers surrounding the SFP, or other obstructions. Where such barriers exist, auditors should assume that at least two nozzles set up to

spray from different directions should be used to ensure adequate coverage. Where two nozzles are used it can be assumed that a total of 250 gpm (125 gpm for each nozzle) would be adequate for a single unit pool or a total of 500 gpm (250 gpm for each nozzle) for a dual unit pool. Using less than two nozzles may be acceptable if the applicant/licensee has established an engineering basis that the use of one nozzle will provide 200(400) gpm effective to the SFP and that the entire SFP is sprayed.

- B. Verify that the strategy is capable of being deployed within the time limit (2 hours or 5 hours) specified in the SE. When fuel is stored in the undispersed configuration the strategy should be capable of being deployed within 2 hours from the time applicant/licensee staff diagnose that external SFP spray required. Once the fuel is dispersed, (as defined in the SE review criteria) then the system should be capable of being deployed within 5 hours from the time applicant/licensee staff diagnose that external SFP spray is required. Fuel may be permanently stored in an undispersed configuration or the fuel may be temporarily stored in the undispersed configuration, such as during refueling. During these periods deployment within 2 hours is required. However, if the fuel is subsequently placed in a dispersed configuration, deployment time for this strategy can be changed to 5 hours.
- C. Verify that the strategy uses an independent pumper truck or portable pump and does not rely upon any installed piping (such as fire protection system standpipes) or power supplies in the SFP building. However, the strategy may use portions of the fire protection system external to the SFP building as a source of water for the portable pump. Some plants may initially utilize the external fire header and hoses to immediately supply water to the SFP because it could be implemented more quickly. However, an independent pumper truck or portable pump is still required to be available for this strategy.
- D. Verify that some reliable method to pressurize the fire protection header is available (where the fire protection header is relied upon to implement this strategy). This could be the installed diesel powered fire pump, independent electrical power sources for electrically powered fire pumps, use of fire protection system from another unit or from offsite sources such as municipal/city/county fire mains. The pump used to charge the fire header should be located approximately 100 yards from the target area, or if not, then it should be protected by intervening structure(s) or located in a reinforced concrete structure to justify pump survivability. In all cases the supply should be capable of supplying the required flow with the conditions assumed for this strategy.
- E. Verify that if portions of the external fire protection system ring header are relied upon to implement this strategy, the procedure or guidance requires that connections to the ring header be approximately 100 yards from the SFP to assure survivability. In addition, the fire management strategy should address methods to isolate potentially damaged headers.

- F. Verify that a 12-hour supply of fuel is stored onsite for the diesel (or gasoline) powered portable pump, if used, or that jumper cables are available if an electric powered portable pump is used. If the portable pump is AC powered using jumper cables from an on-site emergency power source, verify the emergency power source is spatially separated from the vicinity of the SFP.
- G. Verify that sufficient hose is available to spray the SFP from a supply source more than 100 yards from the damage area, on to each accessible side of the structure containing the SFP.
- H. Verify that necessary hoses and monitor nozzles are stored on-site in an area approximately 100 yards or more away from the SFP in order to assure survivability and availability for the spray function. The applicant/licensee may elect to store additional hoses or nozzles adjacent to the SFP for use in the event that conditions permit personnel to enter the area. However, additional hoses and nozzles must be staged away from the SFP in the event conditions do not permit personnel to approach the SFP.
- I. Verify that the specified equipment connection devices and fittings are compatible with plant fittings.
- J. Verify that the water source for the pumper truck or portable pump is sufficient to operate the system at the required flow rate for 12 hours. The water source to the pumper truck or portable pump may be the external fire protection system ring header. The connection to the ring header should be at least 100 yards away from the SFP in order to assure survivability.
- K. Verify that applicant/licensees have implemented additional spray strategies for plants where the fuel is stored within totally reinforced concrete enclosures and the top of active fuel is above grade. For plants with sheet metal siding above the spent fuel deck, it is assumed that the event itself will create the opening. For plants that have reinforced concrete walls and roof surrounding the SFP, the applicant/licensee was required to identify additional strategies to ensure that an adequate spray could be provided to the SFP. These additional strategies could include: direct dispersal of the fuel during refueling outages; use of aerial spray platforms; staging of hoses and spray nozzles; spray through blowout panels, doors, or building vents; spray from the SFP deck, and providing enhanced air cooling. These strategies were identified in the applicant/licensee's submittal(s) and the SE.
- L. Verify for plants where the SFP is surrounded by reinforced concrete and the top of active fuel is above grade that the applicant/licensee has plans for immediate actions that will be taken to pre-stage equipment near the SFP deck to maximize the probability of spray strategy deployment.

- M. Verify that the applicant/licensee has reached agreement, e.g., via a memorandum of understanding (MOU) or a letter of agreement (LOA) with off-site agencies to provide any necessary resources to implement this strategy. These could include agreement to provide lifting capability (e.g., crane or fire truck with an extension ladder) to elevate the monitor or spray nozzles to allow spraying into the SFP and/or pumping capacity to charge the fire header or provide spray into the SFP.
- N. Verify that guidance for implementing this strategy has been incorporated into plant procedures or documents. The implementing guidance for this strategy shall include steps to assist the applicant/licensee staff in determining whether use of the external makeup strategy or external spray strategy is appropriate. The implementing guidance for this strategy should also identify that spray flows to the SFP should be maximized in the event damage occurs prior to the recently discharged fuel being dispersed. The 200 gpm effective spray to the pool is the minimum required for this strategy. Applicant/licensees should attempt to maximize spray flow above this minimum using readily available means, to the extent practical, when recently discharged fuel is not dispersed.
- O. Verify that training has been provided on implementing procedures/guidance. The level of training is expected to be consistent with SAMG-type actions and consistent with utility commitments made to meet the Phase 1 requirements.
- P. Verify any items identified in the SE as candidates for onsite audit have been resolved.

4 Additional Site-specific SFP Makeup Strategies (Table A.2-4). Retain useful insights from the site-specific SFP mitigation assessments for reference in the event an SFP threat occurs. The applicant/licensee is required to identify which of these additional strategies were found to be viable. To be viable the strategy must: provide a substantial fraction of 500 gpm makeup strategy; be readily available; and, be able to be accomplished with onsite equipment in the time available and under plant conditions that may exist.

Through discussions with plant staff and review of documentation:

- A. Verify that the applicant/licensee has implemented the strategies designated "implementation" in Table A.2-4 of their response. Implementation should include preparation of procedures and training of personnel.
- B. Verify that strategies designated in Table A.2-4 as "list" have been listed for use in appropriate plant procedures or guidance. A list is sufficient and it is not necessary to specify the steps necessary for implementation.

2.5 SFP Leakage Control Strategies (Table A.2-5). Identify for emergency response organization the on-site resources that could be used to reduce or stop leakage from a damaged SFP.

Through discussions with plant staff; review of documentation; and, where appropriate, plant walk downs:

- A. Verify that procedures and guidance include the types and locations of materials available onsite which could be used to reduce SFP leakage rates. However, it is not necessary to maintain a minimum inventory of leakage control capabilities at all times. Likewise there is no requirement to store these materials at a specific distance from the potential damage area.

3.2 COMMAND AND CONTROL ENHANCEMENTS FOR IMPROVING INITIAL OPERATIONAL RESPONSE BEFORE THE EMERGENCY RESPONSE ORGANIZATION (ERO) IS FULLY ACTIVATED.

3.2.2 Off-site and On-site Communications (Table A.3-1). The objective is to improve the initial response of the available operational resources and enhance the capability for those resources to communicate with off-site resources.

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that the applicant/licensee has the ability for onsite/offsite communications with the "normal" means lost. The response for this strategy provided a description of the diverse communication resources that existed or that would be added. The auditor should select a sample of these listed resources and verify that they are in place and are being maintained. This could include verifying that emergency radios are available, batteries are charged, and that staff knows how to operate them. Verify that onsite communications will be available during LIPD conditions in all areas of the plant (e.g., portable radios may not be effective when communicating within the Reactor Building or Containment due to building construction).
- B. Verify that the approach for mustering (assembling) the available plant (staff) resources in the event the control room/staff are substantially affected has been incorporated into plant procedures and communicated to applicant/licensee staff.
- C. Verify that the applicant/licensee has established plans for reestablishing communications immediately following a large fire or explosion. For single or common control room sites, the description should provide additional detail regarding who would assume immediate responsibility for communications.
- D. Verify that the applicant/licensee has established plans for how operations and security personnel will coordinate activities immediately following a large fire or explosion.
- E. Verify that training has been performed to implement these plans.
- F. Verify any items identified in the SE as candidates for onsite audit have been resolved.

3.2.3 Notifications/ERO Activation (Table A.3-1). The potential damage to the command and control structure makes early notification of the utility ERO and ERO callout of great importance. This strategy is intended to provide an enhanced level of assurance that the proper notifications of the utility ERO occur and the ERO callout is initiated in a timely manner, despite the potential condition.

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that the applicant/licensee has established plans or a process for establishing the command and control structure prior to the arrival of offsite resources.
- B. Verify that the applicant/licensee has established a procedure/guidance and developed training for making the appropriate offsite notifications of the ERO and ERO callout in the event the control room/staff are substantially affected. For single or common control room sites the description should provide additional details regarding who (i.e., security personnel, a fire brigade, operations) would implement the offsite notification method.
- C. Verify that training has been performed to implement this strategy.
- D. Verify any items identified in the SE as candidates for onsite audit have been resolved.

3.2.4 Initial Operational Response Actions (Table A.3-1). Early actions to assure core cooling can minimize the potential for core damage or can assist in significantly delaying damage time lines. Given the potentially limited on-site resources, it is important to focus on the key actions that may be able to prevent or delay a release as well as be reasonably accomplished in adverse conditions.

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that a procedure/guidance has been developed which describes the specific entry conditions (e.g., total loss of power, loss of control room, and large area loss in plant due to explosion or fire) for initial response actions.
- B. Verify through discussion with plant staff and review of documents that training has been developed and provided to plant staff.
- C. Verify any items identified in the SE as candidates for onsite audit have been resolved.

3.2.5 Initial Damage Assessment (Table A.3-1). In the potential conditions, normal instrumentation may not be available. The purpose of this strategy is to utilize the available onsite resources to perform an assessment of the plant and equipment conditions in order to assist the arriving ERO personnel in decision-making and development of specific strategies.

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that a procedure/guidance has been developed to utilize available onsite resources to perform an assessment of the main plant buildings (e.g., Containment, Turbine Building, Auxiliary Building, Reactor Building, SFP Building) and equipment conditions (e.g., AC/DC power, cooling water, air, communication systems) to assist the arriving ERO in decision making and development of specific strategies.
- B. Verify that training has been developed and provided to plant staff.
- C. Verify any items identified in the SE as candidates for onsite audit have been resolved.

3.3 Enhanced Site Response Strategies for PWRs. For the purposes of implementing these strategies, it can be assumed that the normal command and control structure is in place and functioning. Although it is permissible for equipment to be taken out of service for routine maintenance activities, appropriate applicant/licensee personnel should be made aware when a lack of replacement parts, or other maintenance issues, cause the equipment to be unavailable for extended periods of time and therefore not available to support the response strategies. Equipment associated with these strategies is not required to be treated as safety related equipment. These strategies can be implemented through guidance or procedures, consistent with the site(s) chosen approach. Steps are expected to be general in nature, consistent with the need for flexibility in deployment. The level of training on implementing procedures/guidance is expected to be consistent with SAMG-type actions and consistent with utility commitments made to meet the Phase 1 requirements. For many of these strategies, the implied damage conditions which drive these strategies involve an LIPD; therefore the strategies would be implemented without any off-site or on-site AC or DC power. Borated or treated water sources, although preferable in some conditions, are not required. Implementation of these strategies is not expected to require extraordinary actions; dose rates and actual plant conditions will be considered by the ERO in directing plant response actions.

3.3.1 Makeup to Refueling Water Storage Tank (RWST) (Table A.4-1). This strategy provides a large volume of makeup water to the RWSTk (or equivalent) in order to provide a long term supply to the emergency core cooling systems. A strategy to supply water directly to an operable emergency core cooling system pump is an acceptable alternative.

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that an engineering basis has been established which provides reasonable assurance that the strategy is capable of providing 300 gpm to the RWST. If justification for a lesser flow rate was provided, verify that an engineering basis has been established to ensure this lesser flow rate is at least 100 gpm greater than that required to remove decay heat from the reactor coolant system (RCS).

- B. Verify that the water source has sufficient capacity (216,000 gallons) to supply the required flow rate for 12 hours
- C. Verify that all equipment needed to implement this strategy (e.g., the portable pump, fire ring header, connection to fire ring header, hoses) are at least 100 yards from the potential damage area.
- D. Verify that the specified equipment connection devices and fittings are compatible with plant fittings.
- E. Verify that a procedure/guidance has been developed for implementing this strategy.
- F. Verify that training has been developed and provided to plant staff.
- G. Verify any items identified in the SE as candidates for onsite audit have been resolved.

3.3.2 Manually Depressurize Steam Generators (Table A.4-2). This strategy provides a power-independent means (assumes LIPD) to depressurize steam generators (SGs) by locally manually opening atmospheric dump valves (or SGs PORVs) in order to reduce SG pressure and RCS temperature/pressure.

Through discussions with plant staff, review of documentation and plant walk downs, where appropriate:

- A. Verify that the means is independent of normal and emergency power systems and that the actuation is manual and can be performed locally.
- B. Verify that any needed equipment (e.g., tools, portable power supplies) is located near the desired location or can be reasonably transported to the location.
- C. Verify that a procedure/guidance has been developed for implementing this strategy. The procedure/guidance should consider potential controls on degree and rate of SG depressurization as well as addressing re-closure of the SG atmospheric dump valves (ADVs) / power operated relief valves (PORVs) in the event core damage is imminent in order to prevent a challenge to SG tube integrity.
- D. Verify that training has been developed and provided to plant staff.
- E. Verify any items identified in the SE as candidates for onsite audit have been resolved.

3.3.3 Manual Operation of Turbine or Diesel-driven AFW Pump (Table A.4-3). This strategy provides a power-independent means to provide core cooling and prevent or delay core damage. The goal of this strategy is to enhance the likelihood of long-term operation of the AFW pump and control of steam generator level. However, where it is not feasible to maintain

level control, just starting the AFW pump and letting it run to overfill the SGs can provide a significant delay in the progression of events.

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that the AFW pump can be operated manually assuming an LIPD.
- B. Verify that some means for reasonably managing steam generator level using non powered instrumentation or operator aids (e.g., pump head-flow curve) has been identified.
- C. Verify that a procedure/guidance has been developed for implementing this strategy prior to steam generator dryout.
- D. Verify that training has been developed and provided to plant staff.
- E. Verify any items identified in the SE as candidates for onsite audit have been resolved.

3.3.4 Manually Depressurize SGs and Use Portable Pump (Table A.4-4). Use Strategy #2 (Section 3.3.2) in combination with a low pressure makeup source to provide SG makeup and core cooling. The same portable pump used for the SFP makeup strategy can be used for this strategy. The Fire Protection System can be used as water source to the portable pump. This strategy assumes a loss of all internal power distribution and that areas immediately around the turbine driven or diesel driven AFW pump are inaccessible (otherwise the AFW pump would be used).

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that an engineering basis has been established which provides reasonable assurance that 200 gpm can be provided to the steam generators for a period of at least 12 hours with the assumption that the SGs may remain somewhat pressurized (in order for decay heat to be rejected via PORVs/ADVs). Typically the required SG pressure will be much less than 100 psig. If justification for a lesser flow rate was provided, verify that an engineering basis has been established to ensure this lesser flow rate is capable of removing decay heat from the RCS.
- B. Verify that the source of water has sufficient capacity (144,000 gallons) to provide the required flow rate for 12 hours. When the fire protection system is used as a water source to the portable pump, site procedures should provide guidance on sharing/balancing the use of these resources between firefighting and makeup capabilities.

- C. Verify that any hose connections used to inject water into the system should be located as far away from the AFW system and/or the AFW pump as possible.
- D. Verify that the specified equipment connection devices and fittings are compatible with plant fittings.
- E. Verify that a procedure/guidance has been developed for implementing this strategy. This should consider potential controls on degree and rate of steam generator depressurization. It should also address re-closure of the PORVs/ADVs in order to prevent a challenge to steam generator tube integrity.
- F. Verify that training has been developed and provided to plant staff.
- G. Verify any items identified in the SE as candidates for onsite audit have been resolved.

3.3.5 Makeup to CST/AFWST (Table A.4-5). It is possible to postulate damage that could affect the normal condensate storage tank (CST) or auxiliary feedwater storage tank (AFWST) makeup capability. This strategy provides a high volume makeup source to the CST or AFWST in order to supply water to an operating AFW pump. Therefore, makeup may be provided directly to the AFW suction line or the CST/AFWST. This could utilize the Phase 2 pump or other existing sources. This strategy assumes a LIPD.

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that an engineering basis has been established which provides reasonable assurance that 200 gpm can be provided to the CST/AFWST, or directly to the AFW pump suction, for a period of at least 12 hours. If justification for a lesser flow rate was provided, verify that an engineering basis has been established to ensure this lesser flow rate is capable of removing decay heat from the RCS.
- B. Verify that this makeup capability can be implemented prior to steam generator dryout following depletion of the CST/AFWST, assuming that CST/AFWST is the only water available to remove decay heat.
- C. Verify that the source of water has sufficient capacity (144,000 gallons) to provide the required flow rate for 12 hours.
- D. Verify that a 12-hour supply of fuel is available onsite for the portable pump (if used for this strategy).
- E. Verify that if the Fire Protection System is used for this strategy, consideration is made for isolating any damaged fire headers and that site procedures provide guidance on sharing/balancing the use of these resources between fire fighting and makeup capabilities.

- F. Verify that the alternate makeup source (i.e., a portable pump) required equipment (hoses, fittings, coupling, etc.) and the connection to the Fire Protection System Ring Header are at least 100 yards from the potential damage area. If not, justification must be provided for survivability. If makeup is provided directly to the AFW pump suction, the hoses and connections may be stored locally at the intended connection point.
- G. Verify that the specified equipment connection devices and fittings are compatible with plant fittings.
- H. Verify that a procedure/guidance has been developed for implementing this strategy.
- I. Verify that training has been developed and provided to plant staff.
- J. Verify any items identified in the SE as candidates for onsite audit have been resolved.

3.3.6 Containment Flooding with Portable Pump (Table A.4-6). This strategy provides a power-independent means (a portable pump) to inject water into the containment to flood the containment floor and cover core debris. This strategy assumes loss of all internal power distribution.

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that an engineering basis has been established which provides reasonable assurance that the portable pump is capable of providing 300 gpm to the containment for a period of at least 12 hours, considering that the containment pressure may be elevated (approximately at design pressure) and line losses may be significant, depending on the routing. If justification for a lesser flow rate was provided, verify that an engineering basis has been established to ensure this lesser flow rate is at least 100 gpm greater than the rate needed to remove decay heat from the RCS.
- B. Verify that the source of water has sufficient capacity (216,000 gallons) to provide the required flow rate for 12 hours.
- C. Verify that a 12-hour supply of fuel is available onsite for the portable pump (if used for this strategy).
- D. Verify that site procedures provide guidance on sharing/balancing the use of the Fire Protection System resources between firefighting and makeup capabilities (if used for this strategy).
- E. Verify that the connection to the Fire Protection System ring header (if used for this strategy) is at least 100 yards from the potential damage area or that some justification

for pump survivability is (e.g., intervening structures, nearly 100 yards away from key plant areas, contained in a reinforced concrete structure) is provided.

- F. Verify that the primary equipment needed to flood the primary containment with the portable pump is stored onsite at least 100 yards from the potential damage area. If this separation does not exist then justification for the equipment survivability should be provided.
- G. Verify that the specified equipment connection devices and fittings are compatible with plant fittings.
- H. Verify that all equipment (valves, etc.) required to be manipulated to implement this strategy have been identified.
- I. Verify that a procedure/guidance has been developed for implementing this strategy.
- J. Verify that training has been developed and provided to plant staff.
- K. Verify any items identified in the SE as candidates for onsite audit have been resolved.

3.3.7 Portable Sprays (Table A.4-7). Use portable sprays to reduce the magnitude of any fission product releases by spraying the release point of affected plant structures (Containment/Auxiliary Building). The Fire Protection System may be used as the water supply for the portable pump.

Through discussions with plant staff, review of documentation and plant walk downs where appropriate:

- A. Verify that the strategy is capable of providing the estimated flow rates and the capacities of the water supplies are as stated in the SE for this strategy.
- B. Verify that any portions of the affected plant structures (e.g., Containment/Auxiliary Building) that cannot be sprayed due to physical layout or equipment limitations have been identified.
- C. Verify that needed equipment (e.g., the portable pump, monitor nozzles, hoses) is stored at least 100 yards from the potential damage area.
- D. Verify that the specified equipment connection devices and fittings are compatible with plant fittings.
- E. Verify that the connection to the Fire Protection System ring header (if used for this strategy) is at least 100 yards from the potential damage area or that some justification for pump survivability is (e.g., intervening structures, nearly 100 yards away from key plant areas, contained in a reinforced concrete structure) is provided.

- F. Verify that the pump used to charge the Fire Protection System ring header (if used for this strategy) is at least 100 yards from the potential damage area. If this separation does not exist then justification for the equipment survivability should be provided.
- G. Verify that if the Fire Protection System is used for this strategy, consideration is made for isolating any damaged fire headers and that site procedures provide guidance on sharing/balancing the use of these resources between firefighting and makeup capabilities.
- H. Verify that a procedure/guidance has been developed for implementing this strategy. Consideration should be given to containing runoff, including the amount of spray water that can be contained.
- I. Verify that training has been developed and provided to plant staff.
- J. Verify any items identified in the SE as candidates for onsite audit have been resolved.

3.5 Disposition of Site-specific Enhancement Strategies (Table A.6-1). The Readily Available Measures (RAM) and candidate enhancement strategies (CES) are documented in the NRC's letter to TVA on the closure of B.5.b Phase 3 for WBN Unit 1. The applicant/licensee reviewed those strategies and included in Table A.6-1 those that were determined to be viable for WBN Unit 2. The applicant/licensee also made a determination as to which strategies would be "implemented" and which would be "listed" in site procedures/guidance.

Through discussions with plant staff and review of documentation:

- A. Verify that the applicant/licensee has implemented the strategies designated "implementation" in Table A.6-1. Implementation should include preparation of procedures and training of personnel.
- B. Verify that strategies designated in Table A.6-1 as "list" have been listed for use in appropriate plant procedures or guidance. A list is sufficient and it is not necessary to specify the steps necessary for implementation.

Information Regarding Mitigation Strategy Assessments and Closure Process for Phases 1, 2, and 3" (ADAMS Accession No. ML110330295), indicating that WBN Unit 2 would "follow the prearranged strategies developed for Unit 1 Phase 1 guidance."

In order to confirm the implementation at WBN Unit 2, of the "B.5.b" mitigating strategies required pursuant to Paragraph (hh)(2) of 10 CFR Section 50.54, "Conditions of licenses," the NRC will be conducting an audit in conjunction with the ongoing audit of the mitigating strategies required by Order EA-12-049 (ADAMS Accession No. ML14058A105), and in accordance with NRC Office of Nuclear Reactor Regulation Instruction LIC-111, "Regulatory Audits" (ADAMS Accession No. ML082900195).

This document outlines the audit process that will be used from March 12-14, 2014.

If you have any questions, please contact me at 301-415-5430 or by e-mail at james.polickoski@nrc.gov.

Sincerely,

/RA/

James Polickoski, Project Manager
Project Management Branch
Mitigating Strategies Directorate
Office of Nuclear Reactor Regulation

Docket No.: 50-391

Enclosures:

- 1. Documents Requested for Audit
- 2. Proposed Schedule
- 3. Audit plan

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*via email

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