

June 26, 2008

Mr. William Levis
President & Chief Nuclear Officer
PSEG Nuclear LLC - N09
Post Office Box 236
Hancocks Bridge, NJ 08038

SUBJECT: HOPE CREEK GENERATING STATION AND SALEM NUCLEAR GENERATING
STATION, UNIT NOS. 1 AND 2 - EMERGENCY PLAN CHANGES
(TAC NOS. MD5716, MD5717 AND MD5718)

Dear Mr. Levis:

By application dated June 1, 2007, as supplemented by letters dated August 29, 2007, and March 7, 2008, you submitted proposed changes to the emergency plan for Hope Creek Generating Station (Hope Creek) and Salem Nuclear Generating Station, Unit Nos. 1 and 2 (Salem). The proposed changes would extend the time goal for key emergency response organization personnel to respond and activate emergency response facilities in the event of an emergency. The proposed changes were submitted for Nuclear Regulatory Commission (NRC) review and approval pursuant to Sections 50.54(q) and 50.4(b)(5) of Title 10 of the *Code of Federal Regulations* (10 CFR).

The NRC staff has completed its review of the proposed emergency plan changes as discussed in the enclosed safety evaluation. The staff concludes that the proposed changes meet the standards in 10 CFR 50.47(b) and the requirements in Appendix E of 10 CFR Part 50, and provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Therefore, the proposed changes are acceptable.

If you have any questions concerning this matter, please contact the Hope Creek and Salem Project Manager, Mr. Richard Ennis, at (301) 415-1420.

Sincerely,

/ra/

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation

Docket Nos. 50-354, 50-272, and 50-311

Enclosure: Safety Evaluation

cc w/encl: See next page

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NAME	REnnis	ABaxter	KWilliams*	HChernoff	JGitter	ELeeds (BMallett for)
DATE	6/23/08	6/20/08	6/13/08	6/23/08	6/25/08	6/26/08

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Hope Creek Generating Station and Salem Nuclear Generating Station, Unit Nos. 1 and 2

cc:

Mr. Thomas Joyce
Senior Vice President - Operations
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. Dennis Winchester
Vice President - Nuclear Assessment
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. Robert Braun
Site Vice President - Salem
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. George Barnes
Site Vice President - Hope Creek
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. Carl Fricker
Vice President - Operations Support
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. George Gellrich
Plant Manager - Salem
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. John Perry
Plant Manager - Hope Creek
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. James Mallon
Manager - Licensing
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. Jeffrie J. Keenan, Esquire
PSEG Nuclear - N21
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. Michael Gaffney
Manager - Hope Creek Regulatory
Assurance
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. Steven Mannon
Manager - Salem Regulatory Assurance
P.O. Box 236
Hancocks Bridge, NJ 08038

Township Clerk
Lower Alloways Creek Township
Municipal Building, P.O. Box 157
Hancocks Bridge, NJ 08038

Mr. Paul Bauldauf, P.E., Asst. Director
Radiation Protection Programs
NJ Department of Environmental
Protection and Energy, CN 415
Trenton, NJ 08625-0415

Mr. Brian Beam
Board of Public Utilities
2 Gateway Center, Tenth Floor
Newark, NJ 07102

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Senior Resident Inspector
Salem Nuclear Generating Station
U.S. Nuclear Regulatory Commission
Drawer 0509
Hancocks Bridge, NJ 08038

Senior Resident Inspector
Hope Creek Generating Station
U.S. Nuclear Regulatory Commission
Drawer 0509
Hancocks Bridge, NJ 08038

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO EMERGENCY PLAN CHANGES
FOR
HOPE CREEK GENERATING STATION
AND SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2
DOCKET NOS. 50-354, 50-272 AND 50-311

1.0 INTRODUCTION

By application dated June 1, 2007, as supplemented by letters dated August 29, 2007, and March 7, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML071630331, ML072540628, and ML080790365, respectively), PSEG Nuclear LLC (PSEG or the licensee) submitted proposed changes to the emergency plan (E-plan) for Hope Creek Generating Station (Hope Creek) and Salem Nuclear Generating Station (Salem), Unit Nos. 1 and 2. The proposed changes would extend the time goal for key emergency response organization (ERO) personnel to respond and activate emergency response facilities in the event of an emergency. The proposed changes were submitted for Nuclear Regulatory Commission (NRC) review and approval pursuant to Sections 50.54(q) and 50.4(b)(5) of Title 10 of the *Code of Federal Regulations* (10 CFR).

2.0 REGULATORY EVALUATION

The regulatory requirements and guidance on which the NRC staff based its acceptance are as follows:

2.1 Regulatory Requirements

In 10 CFR 50.47(b)(1) it states, in part, that: "...each principal response organization has staff to respond and to augment its initial response on a continuous basis."

In 10 CFR 50.47(b)(2) it states, in part, that: "...adequate staffing to provide initial facility accident response in key functional areas is maintained at all times," and that "timely augmentation of response capabilities is available ..."

In 10 CFR 50, Appendix E, Section IV, Part A, "Organization," it states, in part, that: "The organization for coping with radiological emergencies shall be described, including definition of authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization..."

Enclosure

2.2 Guidance

Revision 1 to NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Section II.B.5, states, in part, that:

Each licensee shall specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both onsite and away from the site. These assignments shall cover the emergency functions in Table B-1 entitled, 'Minimum Staffing Requirements for Nuclear Power Plant Emergencies.' The minimum on-shift staffing levels shall be as indicated in Table B-1. The licensee must be able to augment on-shift capabilities within a short period after declaration of an emergency. This capability shall be as indicated in Table B-1.

Regulatory Issue Summary 2005-02, "Clarifying the Process for Making Emergency Plan Changes," was issued by the NRC to clarify the meaning of "decrease in effectiveness," to clarify the process for making changes to E-plans, and to provide some examples of changes that are considered to be a decrease in effectiveness.

3.0 TECHNICAL EVALUATION

The NRC staff has reviewed the licensee's regulatory and technical analyses in support of its proposed E-plan changes, as described in PSEG's application dated June 1, 2007, as supplemented by letters dated August 29, 2007, and March 7, 2008. The staff's technical evaluation is detailed below.

3.1 Background

The PSEG E-plan addresses the actions for the Salem Unit Nos. 1 and 2, and Hope Creek. These sites are located in the same physical Owner-Controlled Area (OCA) location. Salem Units Nos. 1 and 2 have separate Control Rooms (CRs) but share the Technical Support Center (TSC) and Operational Support Center (OSC). Hope Creek has its own CR, TSC and OSC. Salem Unit Nos. 1 and 2, and Hope Creek share a common Emergency Operations Facility (EOF) and some support services such as Fire and Emergency Medical Support.

PSEG requested NRC approval for a change to the E-plan allowing the extension of the reporting time goal for key ERO staff to respond to and activate the emergency response facilities (ERF) in the event of an emergency at any one of the three operating units. The requested extension in the response time goal is from 60 minutes to 90 minutes and is due to an increase in traffic congestion in the surrounding area over the last two decades that extended the normal drive time to reach the facilities. This increased transit time has reduced the number of PSEG personnel that are available to fill ERO duty positions. The existing E-plan calls for ERO augmentation by key emergency response staff or "Duty Responders" to activate the respective ERFs "within one hour following initial notification." Notification of the ERO Duty Responders is to be within 15 minutes of initial event classification. The licensee states that "this E-plan requirement effectively results in ERO augmentation being required within 75 minutes of classification with consideration for the time between emergency classification and ERO initial notification (up to 15 minutes)." The licensee requests to amend the existing PSEG E-plan and

change the current approved augmentation criteria of 1 hour following initial notification to 90 minutes after emergency classification which effectively results in an increase of 15 minutes to the ERO augmentation time. In addition, the proposed changes to the E-plan will utilize and commit more of the typical onsite shift staffing for filling key ERO duty responder positions, and two additional Radiation Protection Technicians (RPTs) will be added to the Table B-1 (Table 3.2 of E-plan Section 3) as 90-minute responders.

3.2 Major Functional Areas

The licensee provided a justification of the proposed E-plan changes including a comparison between the NRC Safety Evaluation Report (SER) approved ERO staffing levels and the proposed ERO staffing levels based on Table B-1 in NUREG-0654/FEMA-REP-1. The NRC staff's evaluation of these changes is discussed below for the respective major functional areas in Table B-1.

Firefighting/First Aid

Firefighting activities are an on-shift staff duty in accordance with NUREG-0654/FEMA-REP-1, Table B-1 guidance, which refers to plant technical specifications, rather than defining the fire brigade complement. PSEG at the Salem/Hope Creek site maintain a 5-person firefighting crew for an onsite Fire Department (24 hours a day, 7 days a week, 365 days a year), to perform fire brigade duties and is not impacted by the proposed E-plan change. The fire department's staff reports to the Duty Nuclear Fire Protection Supervisor for normal assignments and directions but receives on-shift direction from the Shift Manager (SM) concerning priority response. The First Aid Team is a collateral duty of the Fire Department. The First Aid Team is staffed by personnel who are qualified Emergency Medical Technicians in the state of New Jersey. The availability of an on-shift Fire Department allows the other on-shift plant personnel to perform their primary ERO functions without the added tasks of Fire Brigade or First Aid Team duties.

Emergency Direction and Control

NUREG-0654/FEMA-REP-1, Table B-1 guidance indicates that the Shift Technical Advisor, Shift Supervisor or designated facility manager may be provided by shift personnel assigned other functions and that overall direction of facility response is to be assumed by the EOF Director when all centers are fully manned. Direction of minute-to-minute facility operations remains with the senior manager in the TSC or CR. The proposed change would increase the augmentation time of the EOF Director from 60 minutes to 90 minutes.

The licensee discusses that the SM initially has the Emergency Coordinator (EC) function and provides emergency direction and control. The SM has the authority and responsibility to immediately and unilaterally initiate any emergency actions. The Control Room Supervisor (CRS) executes operational control of the unit while the SM is fulfilling the EC function. Following the turnover of the EC function from the SM to the Emergency Duty Officer (EDO), the EDO has the authority and responsibility to immediately and unilaterally initiate any emergency actions. The SM has overall command and control of the unit and is accountable for all decisions that require direction by a Senior Reactor Operator licensed individual. The CRS assists the SM. Following the turnover of the EC function from the EDO to the Emergency Response Manager (ERM), the ERM has the authority and responsibility to immediately and unilaterally initiate any emergency actions. The EDO in the TSC retains the authority and

responsibility for immediately and unilaterally initiating measures to protect the plant and onsite personnel. Experience in license operator re-qualification training using plant simulators indicates that the most intense time for SMs (EC) is in the first 15 - 45 minutes after a declared emergency when notification forms for Offsite Response Organizations as well as notifications to the NRC are completed and transmitted.

The licensee further discusses that the SM has the tools, training and personnel to maintain emergency command and control for 90 minutes. The overall focus of the SM is emergency classification, notifications, protective action recommendations (PARs) and oversight of plant operations until TSC activation. The Shift Technical Advisor (STA) is assigned the responsibility to perform independent verification of all emergency classifications. The Shift Radiation Protection Technician (SRPT) provides radiological support in the form of real time dose assessment as well as in-plant assessment of radiological conditions. The OSC is activated by/with on-shift personnel (Shift Maintenance Supervisor) which relieves the SM from direct OSC supervision responsibilities. Plant operations are controlled by the CRS with SM oversight. Two dedicated CR Communicators perform emergency communications in accordance with plant procedures.

The NRC staff finds the compensation described above to extend the required augmentation time for this task to be acceptable. Therefore, the proposed change to the ERO augmentation (response) time continues to meet the intent of the NRC-approved E-plan, and continues to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50.

Notification/Communications

In accordance with Table B-1 of NUREG-0654/FEMA-REP-1, on-shift staffing for Notification/Communications should consist of one position (that, per footnote "*****" may be performed by the engineering aide to the shift supervisor), and one "30-minute" and two "60-minute" responders. The licensee proposed to change the E-plan from one communicator on-shift with one additional at 30-minutes and two additional communicators at 60 minutes to two communicators on-shift with four additional staff at 90 minutes, committing two additional communicators to the EOF, in addition to two additional communicators at the TSC.

The licensee stated that two dedicated on-shift operations staff members fulfill the position/function of CR Communicators to perform emergency communications. The Communicators have prescribed procedures that are followed until TSC turnover is complete. This ensures immediate availability and technical background to comprehend and communicate plant equipment and process issues. Both communicators are directed to perform their procedures as directed by the SM. Communicator #1 performs Event Classification Guide (ECG) Attachment #6 titled, "Primary Communicator Log," which provides the notifications to Federal, State and local agencies. Communicator #2 performs ECG Attachment #8 titled, "Secondary Communicator Log," which assists the Primary Communicator with 15-minute notifications and performs other communication duties such as activation of the Emergency Response Data System.

This proposed change provides greater coverage than the Table B-1 requirement and would provide increased communications support capability in the early stages of an event when the need for the functional support would be greater. Based on the on-shift staffing complement designated in the proposed E-plan change for notifications/communications (which is in excess

of Table B-1 of NUREG-0654/FEMA-REP-1) and the advanced communications capabilities available, the NRC staff believes that adequate on-shift resources exist to support offsite notifications/communications within 90 minutes of event classification, prior to being relieved by the TSC or EOF. The staff finds the compensation described above to extend the required augmentation time for this task to be acceptable. Therefore, the proposed change to the ERO augmentation (response) time continues to meet the intent of the NRC-approved E-plan, and continues to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50.

Radiological Accident Assessment and Support of Operational Accident Assessment

(1) Offsite Dose Assessment

The licensee proposed to change the E-plan from offsite dose assessment being performed by the SRPT and no augmented responders, to offsite dose assessment being performed by the SRPT and providing for two additional 90-minute responders (as provided in Exhibit 3 Table 3-2 of supplemental response dated March 7, 2008) as augmentation for this task. NUREG-0654/FEMA-REP-1, Table B-1 and the existing E-plan guidance for offsite dose assessment states that one Senior Health Physics Expertise should be on a 30-minute response.

The licensee discusses that the SRPTs are trained to perform onsite and offsite dose assessment/projections, radiological PARs, onsite and in-plant monitoring, and are present 24 hours a day, 7 days a week. The SRPT obtains radiological data and meteorological data from the Radiation Monitoring System (RMS) and Plant Display Systems. Dose assessment is performed using a stand-alone Windows-based computer program. Dose projections can be obtained in approximately 5 minutes. Radiological PARs can be made rapidly using the dose assessment projection report and radiological PAR flowchart. The recent upgrade to a Windows-based dose assessment program has improved the ability of on-shift radiation protection to be able to perform dose assessment/projection functions, while being available to respond to other emergency tasks. The SRPT will make offsite dose projections using prescribed methods. These dose projections are used as a basis for offsite radiological PARs, which the SRPT provides to the SM in the CR. The SM will consider both the recommendations from the SRPT and his/her own evaluation of the plant status (predetermined PAR) to derive an appropriate PAR to be communicated to offsite authorities.

Two additional Radiological Assessment Coordinators (RACs) will assume responsibility for offsite dose projection and monitoring upon arrival at the TSC. The RACs also provide information to the communicators to give the states of Delaware and New Jersey updates to the Station Status Checklist to enable the states to calculate an independent offsite dose projection.

Having the capability to perform actual or potential offsite consequence analysis of a radiological emergency condition is required by 10 CFR 50.47(b)(9). The PSEG on-shift organization includes an SRPT at each station (Salem and Hope Creek) trained and qualified to perform onsite/offsite dose assessments/projections. The NRC staff finds the incorporation of the technological advances in dose assessment described above to extend the required augmentation time for this task to be acceptable. Therefore, the proposed change to the ERO augmentation (response) time continues to meet the intent of the NRC-approved E-plan, and

continues to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50.

(2) Offsite Surveys

Currently the E-plan calls for offsite surveys being performed by two technicians at 30 minutes and two technicians at 60 minutes. The licensee proposed to change the E-plan such that offsite surveys would be performed by onsite field monitoring personnel until the offsite field monitoring team members report to the EOF. Two offsite teams, each with a monitor and a driver (4 ERO members total), would report to the EOF within 90 minutes. NUREG-0654/FEMA-REP-1, Table B-1 and the existing E-plan guidance for offsite surveys states that two Health Physics (HP) Technicians should be on a 30-minute response and two should be on a 60-minute response.

The licensee discusses that the on-shift staffing includes one SRPT, one Onsite Radiation Protection Technician (ORPT) and one Chemistry Technician at each station (Salem and Hope Creek). Key Radiation Protection (RP) functions of dose assessment, in-plant repair team coverage, onsite/in-plant monitoring and sampling/analysis is covered by the six RP/Chemistry Technicians on-shift (three at each station). Radiation support functions such as access control, personnel monitoring, and dosimetry are covered by plant process enhancements (newer technology/tools) using available equipment such as portal monitors, self-alarming dosimeters, and an automated access control point. Both Salem and Hope Creek have active Emergency Radiation Work permits that can be used if an emergency is declared. At an Alert, all ERO responders' allowable exposure is increased to 4500 millirem in accordance with plant emergency procedures. The computerized access control system (ProRad module) verifies qualifications, dose margins and access requirements eliminating tasks previously performed by RP Technicians manually. All onsite ERO members expected to be dispatched into the plant for evaluation, operations, or repair activities are Radiation Worker and Respirator qualified. Upon exiting the radiological controlled area, personnel are required to pass through portal monitors which will alarm if contamination is found. All Radiation Workers are qualified to use a handheld frisker (Eberline RM3C or E140N) to monitor for contamination. If assistance is needed, the ORPT would be called. This proposed change increases the initial response capability available to conduct offsite surveys.

The SRPT will make offsite dose projections using the prescribed methods. These dose projections are used as a basis for offsite radiological protective action recommendations, which the SRPT relays to the SM in the CR. The SM considers both the recommendation from the SRPT and his/her own evaluation of the plant status (predetermined protective action recommendation) to derive an appropriate protective action recommendation to be communicated to offsite authorities. The SRPT also assigns onsite radiation protection and chemistry personnel to obtain radiation monitor data and coolant samples for analysis. As directed by the SRPT and in accordance with applicable plant procedures, the onsite monitoring personnel can be dispatched offsite for field monitoring until the EOF field monitoring teams are in place.

The NRC staff believes that adequate resources are available, based on the assignment of additional on-shift technicians, to support in-plant protective actions within 90 minutes of event classification prior to staff augmentation. The licensee relies on the availability of computer systems and enhanced processes in personnel monitoring and access control, to relieve RP

Technicians of access control, personnel monitoring and dosimetry tasks, thereby freeing the RP Technicians to cover any vital response activities. The NRC staff finds the compensation described above to extend the required augmentation time for this task to be acceptable. Therefore, the proposed change to the ERO augmentation (response) time continues to meet the intent of the NRC-approved E-plan, and continues to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50.

(3) Onsite (out of Plant) Surveys

For onsite (out of plant surveys), the licensee proposed to change the E-plan from one technician at 30 minutes and one technician at 60 minutes to one technician on-shift and one technician at 90 minutes. NUREG-0654/FEMA-REP-1, Table B-1 and the existing E-plan guidance for onsite surveys states that one HP technician should be on a 30-minute response and one additional should be on a 60-minute response.

The licensee discusses that the on-shift staffing includes one SRPT, one ORPT and one Chemistry Technician at each station (Salem and Hope Creek). Key RP functions of dose assessment, in-plant repair team coverage, onsite/in-plant monitoring and sampling/analysis is covered by the six RP/Chemistry Technicians on-shift (three at each station). Radiation support functions such as access control, personnel monitoring, and dosimetry are covered by plant process enhancements (newer technology/tools) using available equipment such as portal monitors, self-alarming dosimeters, and an automated access control point. Both Salem and Hope Creek have active Emergency Radiation Work Permits that can be used if an emergency is declared. At an Alert, all ERO responders' allowable exposure is increased to 4500 millirem in accordance with plant emergency procedures. The computerized access control system (ProRad module) verifies qualifications, dose margins and access requirements eliminating tasks previously performed by RP Technicians manually. All onsite ERO members expected to be dispatched into the plant for evaluation, operations, or repair activities are Radiation Worker and Respirator qualified. Upon exiting the radiological controlled area, personnel are required to pass through portal monitors which will alarm if contamination is found. All Radiation Workers are qualified to use a hand-held frisker (Eberline RM3C or E140N) to monitor for contamination. If assistance is needed, the ORPT would be called.

The NRC staff believes that adequate resources are available, based on the assignment of additional on-shift technicians, to support in-plant protective actions within 90 minutes of event classification prior to staff augmentation. The licensee relies on the availability of computer systems and enhanced processes to relieve RP Technicians of access control, personnel monitoring and dosimetry tasks, thereby freeing the RP Technicians to cover any vital response activities. The staff finds the compensation described above to extend the required augmentation time for this task to be acceptable. Therefore, the proposed change to the ERO augmentation (response) time continues to meet the intent of the NRC-approved E-plan, and continues to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50.

(4) In-Plant Surveys

For in-plant surveys, the licensee proposed to change the E-plan from one HP technician on-shift, one technician at 30 minutes and one technician at 60 minutes, to two HP technicians on-shift and one technician at 90 minutes. NUREG-0654/FEMA-REP-1, Table B-1 guidance for

in-plant surveys and the existing E-plan guidance is one HP technician onsite, one technician with a 30-minute response and another technician with a 60-minute response.

The licensee discusses that the on-shift staffing includes one SRPT, one ORPT and one Chemistry Technician at each station (Salem and Hope Creek). Key RP functions of dose assessment, in-plant repair team coverage, onsite/in-plant monitoring and sampling/analysis is covered by the six RP/Chemistry Technicians on-shift (three at each station). Radiation support functions such as access control, personnel monitoring, and dosimetry are covered by plant process enhancements (newer technology/tools) using available equipment such as portal monitors, self-alarming dosimeters, and an automated access control point. Both Salem and Hope Creek have active Emergency Radiation Work Permits that can be used if an emergency is declared. At an Alert, all ERO responders' allowable exposure is increased to 4500 millirem in accordance with plant emergency procedures. The computerized access control system (ProRad module) verifies qualifications, dose margins and access requirements eliminating tasks previously performed by RP Technicians manually. All onsite ERO members expected to be dispatched into the plant for evaluation, operations, or repair activities are Radiation Worker and Respirator qualified. Upon exiting the radiological controlled area, personnel are required to pass through portal monitors which will alarm if contamination is found. All Radiation Workers are qualified to use a hand-held frisker (Eberline RM3C or E140N) to monitor for contamination. If assistance is needed, the ORPT would be called. This proposed change increases the initial response capability available to conduct in-plant surveys.

The NRC staff believes that adequate resources are available, based on the assignment of additional on-shift technicians, to support in-plant protective actions within 90 minutes of event classification prior to staff augmentation. The licensee relies on the availability of computer systems and enhanced processes to relieve RP Technicians of access control, personnel monitoring and dosimetry tasks, thereby freeing the RP Technicians to cover any vital response activities. The staff finds the compensation described above to extend the required augmentation time for this task to be acceptable. Therefore, the proposed change to the ERO augmentation (response) time continues to meet the intent of the NRC-approved E-plan, and continues to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50.

(5) Chemistry/Radio-Chemistry

For the chemistry/radio-chemistry tasks, the licensee proposed to change the E-plan from one technician on-shift and one technician at 60 minutes to one technician on-shift and one technician at 90 minutes. NUREG-0654/FEMA-REP-1, Table B-1 guidance for chemistry/radio-chemistry indicates that one rad/chem technician should be assigned on-shift with the capability to augment one technician in 60 minutes. The licensee discusses that there is one Chemistry Technician at each station (Salem and Hope Creek) on-shift and that the unaffected station's Chemistry Technician would support the affected station's Chemistry Technician. Technological advances implemented since the issuance of NUREG-0654/FEMA-REP-1 (i.e., severe accident management guidelines (SAMGs), core damage assessment methodologies) have reduced the need for prompt augmentation of radio-chemistry capabilities. Furthermore, the task burden for the nuclear chemist was significantly reduced with the elimination of the requirements for the Post-Accident Sampling System at Salem Unit Nos. 1 and 2, and Hope Creek with License Amendments 254, 235 and 149, respectively.

The NRC staff finds the compensation described above to extend the required augmentation time for this task to be acceptable. Therefore, the proposed change to the ERO augmentation (response) time continues to meet the intent of the NRC-approved E-plan, and continues to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50.

Plant System Engineering, Repair and Corrective Actions

(1) Technical Support

For the technical support task, the licensee proposed to change the E-plan from one Core/Thermal Engineer at 30 minutes to one Core/Thermal Engineer at 90 minutes (the current 30-minute capability is performed by the STA until relieved by the Core/Thermal Engineer). NUREG-0654/FEMA-REP-1, Table B-1 and the existing E-plan guidance for technical support states that one Core/Thermal Hydraulics Engineer should be on a 30-minute response.

In its letter dated June 1, 2007, the licensee provided the following justification for the proposed change for the technical support function:

The Shift Technical Advisor (STA) is the accident assessment advisor to the Control Room staff during the initial phases of an emergency. Bases documents for EALs provide core damage assessment information based on high range containment monitor readings and Reactor Coolant System (RCS) sample results. Comprehensive technical support is not needed during the initial stages of an emergency. The design, training and use of the Emergency Operating Procedures (EOPs) by the Control Room staff is the primary mitigation tool in the early stages of an emergency. Severe Accident Management Guideline (SAMG) evaluation and direction is performed in the TSC when needed in accordance with the Station Emergency Operating Procedures (EOPs). Prior to TSC activation, Control Room SAMG procedures at Salem and EOPs at Hope Creek provide adequate operational direction.

The proposed revision to ERO augmentation timeliness goals will not impede the capability of on-shift personnel to adequately manage the technical support function in the early stages of an emergency.

The licensee's letter dated June 1, 2007, also stated that the STA is an individual experienced in core analysis and thermal hydraulics.

Based on the STA's experience in core analysis and thermal hydraulics, the capabilities of the various on-shift personnel to recognize core damage indications (e.g., based on plant parameters and use of EAL bases documents), and procedure improvements since the implementation of NUREG-0654/FEMA-REP-1, Revision 1 (e.g., symptom-based EOPs and severe accident procedures), the NRC staff finds that adequate on-shift expertise and associated resources exist to perform the Technical Support task until the Core/Thermal Engineer responds. Therefore, the proposed change to the ERO augmentation (response) time continues to meet the intent of the NRC-approved E-plan, and continues to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50.

(2) Repair and corrective actions

NUREG-0654/FEMA-REP-1, Table B-1 guidance for repair and corrective actions states that two individuals, one Mechanical Maintenance/Rad Waste operator and one Electrical Maintenance/Instrument and Control Technician, should be designated on-shift, but may be provided by shift personnel assigned other functions. In addition, Table B-1 guidance outlines the addition of one Electrical Maintenance staff member and one Instrument and Controls Technician to be augmented within 30 minutes, and one Mechanical Maintenance staff member, one Rad Waste Operator and one Electrical Maintenance staff member to be augmented within 30 minutes. The licensee proposed to change the E-plan from two on-shift, two 30-minute responders and three 60-minute responders to eight on-shift staff with two positions designated as “may be provided by other shift personnel assigned other functions.”

The licensee discusses the normal on-shift staffing as follows:

- Shift Maintenance Supervisor – one at each station
- Shift Electrician – one at each station
- Shift Instrument and Control Technician – one at each station
- Rad Waste Operator – one at each station

Troubleshooting and repairs of defective equipment is performed by the on-shift maintenance personnel. The unaffected station’s Electrician and Instrument and Control technician will respond to provide support to the affected station’s technicians. The technicians from the other station would be able to perform routine tasks that are not specific to the affected station such as racking in and out breakers, electrical troubleshooting and repairs (T & R), instrument or indicator T & R, repairs, etc. In addition, for areas that require specific plant knowledge, these technicians can provide support to the affected station technicians. Maintenance technicians support outages at their sister stations and thus obtain familiarity with the layout and equipment locations at each station. The Rad Waste Operator position is filled by a 3rd on-shift Nuclear Equipment Operator at Salem and an on-shift Rad Waste Operator at Hope Creek.

The NRC staff finds the compensation described above to extend the required augmentation time for this task to be acceptable. Therefore, the proposed change to the ERO augmentation (response) time continues to meet the intent of the NRC-approved E-plan, and continues to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50.

Protective Actions (In-Plant)

NUREG-0654/FEMA-REP-1, Table B-1 guidance for protective actions (in-plant) indicates that two HP technicians should be assigned on-shift to support radiation protection activities. However, these HP technicians may be provided by shift personnel assigned other functions and this staff will be augmented with two additional HP technicians in 30 minutes and two additional HP technicians in 60 minutes. The existing E-plan coincides with the Table B-1 guidance. The licensee proposes to change the E-plan to two on-shift (may be provided by shift personnel assigned other functions), two additional on-shift personnel (that will be radiation worker qualified) and three additional RP staff as 90-minute responders (as provided in Exhibit 3 Table 3-2 of supplemental response dated March 7, 2008). The proposed E-plan will have more staff onsite during the initial plant emergency response which is beyond that required by Table B-1.

The licensee discusses that the on-shift staffing includes one SRPT, one ORPT and one Chemistry Technician at each station (Salem and Hope Creek). Key RP functions of dose assessment, in-plant repair team coverage, onsite/in-plant monitoring and sampling/analysis is covered by the six RP/Chemistry Technicians on-shift (three at each station). Radiation support functions, such as access control, personnel monitoring, and dosimetry are covered by plant process enhancements (newer technology/tools) using available equipment such as portal monitors, self-alarming dosimeters, and an automated access control point. Both Salem and Hope Creek have active Emergency Radiation Work Permits that can be used if an emergency is declared. At an Alert, all ERO responders' allowable exposure is increased to 4500 millirem in accordance with EPIP. The computerized access control system (ProRad module) verifies qualifications, dose margins and access requirements eliminating tasks previously performed by RP Technicians manually. All onsite ERO members expected to be dispatched into the plant for evaluation, operations, or repair activities are Radiation Worker and Respirator qualified. Upon exiting the radiological controlled area, personnel are required to pass through portal monitors which will alarm if contamination is found. All Radiation Workers are qualified to use a hand-held frisker (Eberline RM3C or E140N) to monitor for contamination. If assistance is needed, the ORPT would be called. This proposed change increases the initial response capability available to conduct in-plant protective actions.

The NRC staff believes that adequate resources are available, based on the assignment of additional on-shift technicians, to support in-plant protective actions within 90 minutes of event classification prior to staff augmentation. The licensee relies on the availability of computer systems and enhanced processes to relieve RP Technicians of access control, personnel monitoring and dosimetry tasks, thereby freeing the RP Technicians to cover any vital response activities. The staff finds the compensation described above to extend the required augmentation time for this task to be acceptable. Therefore, the proposed change to the ERO augmentation (response) time continues to meet the intent of the NRC-approved E-plan, and continues to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50.

4.0 STATE COORDINATION

PSEG has coordinated these proposed changes with the Emergency Management Agencies of the states of New Jersey and Delaware as referenced by letters of concurrence from each agency that accompanied the PSEG letter dated August 29, 2007.

5.0 CONCLUSION

The NRC staff finds that the proposed E-plan changes meet the standards in 10 CFR 50.47(b) and the requirements in Appendix E of 10 CFR Part 50, and provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Therefore, the NRC staff concludes that the licensee's proposed changes to the PSEG E-plan in its application dated June 1, 2007, and as supplemented by letters dated August 29, 2007, and March 7, 2008, are acceptable.

6.0 REFERENCES

1. PSEG Letter, "Request For Emergency Plan Change," dated June 1, 2007 (ADAMS Accession No. ML071630331).
2. PSEG Letter, "Request For Emergency Plan Change – Supplemental Information," dated August 29, 2007 (ADAMS Accession No. ML072540628).
3. PSEG Letter, "Response To RAI [Request for Additional Information] On PSEG Request For Emergency Plan Change," dated March 7, 2008 (ADAMS Accession No. ML080790365).
3. NUREG-0654/FEMA REP-1, Revision 1, Supplement 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," dated November, 1980 (ADAMS Accession No. ML040420012).
4. NRC Regulatory Issue Summary 2005-02, "Clarifying the Process for Making Emergency Plan Changes," dated February 14, 2005 (ADAMS Accession No. ML042580404).

Principal Contributor: M. Norris

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