



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

JUL 17 1985

Docket No. 50-354

Mr. R. L. Mittl, General Manager
Nuclear Assurance and Regulation
Public Service Electric & Gas Company
P. O. Box 570, T22A
Newark, New Jersey 07101

Dear Mr. Mittl:

SUBJECT: HOPE CREEK EMERGENCY PLAN

The Hope Creek Safety Evaluation Report (SER) issued in October 1984 provided the staff's review and evaluation of the Hope Creek emergency plan through Revision 4. In the SER, the staff identified a number of open and confirmatory items. In response to the emergency plan deficiencies identified in the SER, PSE&G submitted Revisions 5 through 7 to the plan. Certain changes incorporated by these revisions were discussed with PSE&G during an onsite visit on May 17, 1985. During this visit, PSE&G committed to provide information/clarification requested by the staff. Those commitments were confirmed in your letter of May 30, 1985.

The staff has completed its review and evaluation of the adequacy of the Hope Creek emergency plan (through Revision 7) and the commitments in your May 30, 1985 letter. The results of this evaluation are provided in the Enclosure. The staff's findings are discussed under the same headings and numbering system used in the SER. Section 13.3.3 provides a status update on the Federal Emergency Management Agency's (FEMA) report on the state of offsite emergency planning and preparedness. Section 13.3.4 provides the staff's conclusions.

On the basis of our review of the onsite plan, we conclude that upon satisfactory completion of the items committed to by PSE&G as identified in Section 13.3.2 of the Enclosure, the Hope Creek emergency plan will provide an adequate planning basis for an acceptable state of onsite emergency preparedness and will meet the requirements of 10 CFR 50 and Appendix E thereto. The staff will confirm that PSE&G has complied with its commitments in a future supplement to the SER following a review of the revisions to the Hope Creek emergency plan.

JUL 17 1985

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FEMA has advised the staff that a complete offsite plan finding based on revised New Jersey State plans and an evaluation of the April 1985 offsite remedial exercise will be furnished to the NRC by September 15, 1985. After reviewing the findings and determinations made by FEMA on the adequacy of state and local emergency response plans, a supplement to the SER will provide the staff's overall conclusions on the adequacy of emergency preparedness for Hope Creek prior to authorization for operation above five percent of rated power.

Sincerely,

Original signed by:

Walter R. Butler, Chief
Licensing Branch No. 2
Division of Licensing

Enclosure:
As stated

cc: See next page

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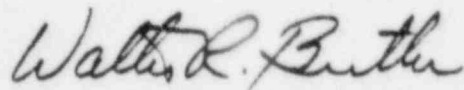
NRC PDR
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Sincerely,

A handwritten signature in cursive script, reading "Walter R. Butler".

Walter R. Butler, Chief
Licensing Branch No. 2
Division of Licensing

Enclosure:
As stated

cc: See next page

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Public Service Electric & Gas Co.

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13.3 Emergency Plan

13.3.1 Background

The SER issued October 1984 provided the staff's review and evaluation of the Hope Creek Generating Station radiological emergency response plan (plan) through Revision 4 submitted by letter dated September 12, 1984. In the SER, the staff identified an open item and confirmatory items for which the applicant had made commitments but had not yet revised the plan. In response to the SER, the applicant submitted Revision 5 to the plan on November 9, 1984, Revision 6 on January 16, 1985 and Revision 7 on April 4, 1985 which resolved some of the confirmatory items. Certain changes to the plan incorporated by Revisions 5, 6 and 7 were discussed with the applicant during an onsite visit on May 17, 1985. The applicant committed to provide information/clarification requested by the staff during that meeting. The applicant confirmed these commitments in a letter dated May 30, 1985, and the staff has included two new confirmatory items related to these commitments in this SSER.

The staff has completed its review and evaluation of the adequacy of the applicant's plan (through Revision 7) and the applicant's commitments in correspondence dated May 30, 1985. The results of this evaluation are given in Section 13.3.2 below. The staff's findings are discussed under the same headings and numbering system used in the SER. Section 13.3.3 provides a status update on the Federal Emergency Management Agency's (FEMA) report on the state of offsite emergency planning and preparedness. Section 13.3.4 provides the staff's conclusions.

13.3.2. Evaluation of the Emergency (Onsite) Plan

13.3.2.1 Assignment of Responsibility (Organizational Control)

Confirmatory Item 1

The staff will rely on FEMA's evaluation of offsite plans to ensure that Hope Creek is incorporated into the states' plans for the plume and ingestion Emergency Planning Zones (EPZs).

Evaluation

FEMA's evaluation of the status of offsite plans is discussed in Section 13.3.3 of this supplement. This confirmatory item is closed. Updates on FEMA's evaluation of offsite plans will be discussed in Section 13.3 of future supplements to this report.

Confirmatory Item 2

The matter of finalizing the draft and interim letters of agreement with the agencies/individuals identified in Attachment 2-1 to the plan is confirmatory.

Evaluation

The agreement letters have not been finalized. This matter remains confirmatory.

13.3.2.3 Emergency Response Support and Resources

Confirmatory Item

Section 4.4.2 of the plan specifies that the emergency response capabilities of the General Electric Company will be provided later.

Evaluation

The applicant has not provided this information. This matter remains confirmatory.

13.3.2.4 Emergency Classification System

Confirmatory Item

The matter of the Event Classification Guide (ECG) is confirmatory, and the staff will ensure that the ECG is completed before fuel loading, currently projected for December 1985.

Evaluation

The applicant's ECG (Section 5.0 of the plan, Rev. 2, January 11, 1985) was submitted by Revision 6 to the plan. Minor changes were made to the ECG by Revision 7 to the plan. The staff has completed its review and evaluation of the ECG, Rev. 2 dated January 11, 1985 and finds that additional information

and clarification are required before the staff can make a finding that the emergency action levels contained in the ECG meet the guidance criteria of Appendix 1 to NUREG-0654. The staff has requested the applicant to furnish the additional information and clarification. Following its review of the revised ECG, the staff will provide its evaluation of the ECG in a future supplement to this report. This matter remains confirmatory.

13.3.2.5 Notification Methods and Procedures

Confirmatory Item 1

The applicant is required to submit the emergency plan implementing procedures for staff review at least 180 days before the scheduled issuance of an operating license.

Evaluation

The applicant submitted the emergency plan implementing procedures on June 3, 1985. The procedures will be reviewed during the onsite appraisal in August 1985. The staff finds this portion of the applicant's plan adequate.

Confirmatory Item 2

The applicant briefly described an emergency broadcast system (EBS) manual and committed to reference the manual in the plan. This matter is confirmatory.

Evaluation

Section 6.0 (Rev. 5, dated April 1, 1985) to the plan contains a reference to the EBS manual developed by the States of Delaware and New Jersey for broadcasting information on predetermined emergency responses to the public. The staff finds this portion of the applicant's plan adequate.

13.3.2.6 Emergency Communications

Confirmatory Item

Communication links with the NRC will consist of dedicated lines. The location of these lines will be determined at a later date. A description of the Hope Creek internal communication system will be provided by December 1984. This matter is confirmatory.

Evaluation

Section 7.0 (Rev. 3, dated October 31, 1984) of the plan describes the Hope Creek internal communication and alarm systems. The description includes an alarm system consisting of fire, radiation alert, and evacuation (reactor building, refueling floor and emergency diesel room) alarms, station public address (PA) system, station telephone system, and station radio system. The site radiation alert alarm will be broadcast throughout the site by the PA system. The alarm has a manual suppress feature used to lower the alarm volume

after about 15 seconds, so that further information or instructions may be broadcast on the PA system regarding special measures that may be necessary for site personnel. If evacuation from the site or certain buildings onsite becomes necessary, appropriate instructions will be broadcast. Evacuation alarms sounding in the reactor building, refueling floor or emergency diesel room call for an immediate evacuation of that area.

The station telephone system is a conventional system for use by station personnel in making calls within and outside the station. Two independent telephone cables will have backup power by batteries located onsite. The control room will have a direct telephone line to the load dispatching center at the company headquarters in Newark. A separate, microwave telephone system will back up the conventional telephone system. This system will be located at key points throughout the station and at the emergency operations facility (EOF).

The station radio system is a multi-frequency security radio system. When an emergency event is declared, one specific frequency is assigned for emergency communications between the control room, technical support center (TSC), EOF, and onsite and offsite radiation monitoring teams.

The plan specifies that direct communication to the NRC will be located in the control room, TSC and EOF.

The staff finds this portion of the applicant's plan adequate.

13.3.2.7 Public Information

Confirmatory Item

The applicant furnished the staff with a sample public information brochure and informed the staff that the final brochure would be provided in mid-1985. In a letter dated September 12, 1984, the applicant committed to provide the final brochure to the local population as outlined in the plan. This matter is confirmatory.

Evaluation

The final brochure has not been submitted for review. This matter remains confirmatory.

13.3.2.8 Emergency Facilities and Equipment

Confirmatory Item 1

In its January 31, 1984 submittal, the applicant stated that the Operations Support Center (OSC) and TSC are under construction, and as information on these facilities becomes available, it will be incorporated into the plan. This matter is confirmatory.

Evaluation

A detailed discussion of the OSC and TSC has not been incorporated into the plan. This matter remains confirmatory.

Confirmatory Item 2

In the January 31, 1984 response to the staff's request for additional information on onsite monitoring systems used to initiate emergency measures and for conducting assessment, the applicant stated that the plan will be updated as information becomes available on these systems. This matter is confirmatory.

Evaluation

Section 9.1 of the plan generally describes the radiological and process monitoring systems. Potential gaseous release pathways are identified. Table 9-8 provides a detailed listing of the radiological and process monitors including identification of the monitor, number of channels, detector type, location and range, and minimum detectable concentration. Table 9-8 also provides a listing of area radiation monitor locations and ranges. According to the plan, FSAR Sections 11.5 and 12.3.4 provide a complete description of the radiation monitoring program. The staff finds this portion of the applicant's plan adequate. Assessment systems are discussed in Section 13.3.2.9 of this supplement.

Confirmatory Item 3

In a letter dated September 12, 1984, the applicant committed to include information on seismic and hydrological monitors in the next plan revision, scheduled for October 1984. This matter is confirmatory.

Evaluation

Section 9.1 of the plan generally describes the seismic and river level monitoring systems. According to the plan, a complete description of the seismic monitoring system may be found in Section 3.7.4 of the FSAR. The ECG contains emergency action levels based on readings from these geophysical monitoring systems. The geophysical instrumentation at the Salem Generating Station will provide backup capability. The staff finds this portion of the applicant's plan adequate.

Confirmatory Item 4

The matter of the meteorological monitoring program, as presented in the plan, is confirmatory pending the outcome of the onsite appraisal.

Evaluation

The onsite appraisal at Hope Creek is currently scheduled for August 1985, however, no specific date has been set as yet. Following the conduct of the

onsite appraisal and issuance of an inspection report , the staff's conclusions on the meteorological monitoring program will be presented in a future supplement to this report. This matter remains confirmatory.

13.3.2.9 Accident Assessment

Open Item

Before the staff can complete its evaluation in this regard, the applicant must provide a description of the emergency dose assessment computer model or the alternate computer support to be used. This is an open item.

Evaluation

Three methods for assessing the potential and actual consequences of a release of airborne radioactivity are stated in the plan. The primary method uses a dedicated telephone line connection to Pickard, Lowe and Garrick (PLG) to use PLG's Meteorological Information and Dose Assessment System (MIDAS) on time-shared facilities. This MIDAS software will be installed later on the VAX 11/750 computers which are part of Hope Creek's Central Radiation Processor (CRP).

The CRP contains the second method for assessing accident consequences. The CRP provides release rate calculations, dose rate calculations and dose integration. Most calculations are provided using a modified puff advection model which includes a straight line Gaussian modification for the initial release

calculation. Dose conversion factors are taken from Regulatory Guide 1.109. The system provides for data storage and reporting according to the guidelines in Regulatory Guide 1.21.

The third method available for assessing potential and actual accident doses is a manual method using transparent Gaussian plume overlays on site maps. The procedures and materials for utilizing this method will be incorporated in 1985 in the plan implementing procedures, and will be kept in the emergency kits in the emergency response facilities.

The MIDAS software system includes two plume dispersion models; one model uses the straightline Gaussian technique and a second model estimates plume trajectory using a segmented approach. The straightline Gaussian model conforms to the description of a Class A model in Appendix 2 to NUREG-0654, Rev. 1. It will produce isopleth plots on a base map of the site vicinity.

The other model to be installed at Hope Creek in 1985 is an enhanced Class A model which meets the guidance criteria in Appendix 2 of NUREG-0654, Rev. 1, for a Class B model. This plume segment model, based on the CRACIT program, calculates meteorological dispersion and deposition of the released radioactive material as the material travels downwind, and estimates resulting doses. The meteorological dispersion is modeled assuming Gaussian diffusion and variable trajectory transport.

Several choices of source term input will be incorporated by the end of 1985 into the procedures for use of the various models. These include information on radionuclide concentrations and flow rates from plant effluent monitors, measurements of dose rates inside containment, and preset release scenarios for accident scenarios based on design basis accidents. Meteorological information necessary to use the dose assessment methodologies can be obtained from the plant Meteorological Monitoring System and alternative sources. The methods described by the applicant can estimate doses to the relevant target organs of individuals in the vicinity of the site.

The applicant has committed to develop procedures by the end of 1985 to monitor potential release pathways and to use the monitoring results to make dose projections for different meteorological conditions. Procedures will be developed in the same time frame for making dose projections based on field sampling results. Plan implementing procedures will also be developed describing in detail how dose projections will be made if radiation monitors are off-scale or out of service.

In the event of a radioactive release to the liquid pathway, i.e., the Delaware River, water samples will be taken and counted with NaI gamma scintillation detector or equivalent, and dose projections made from instrument readings. Procedure EP-IV-107 also provides a method for rapidly estimating doses from liquid releases.

On May 8, 1985, the staff requested additional information/clarification as a result of its review of Section 10 of the plan submitted on January 16, 1985. The staff's request lists the dose assessment capabilities that need to be confirmed by the applicant. Accordingly, this matter is confirmatory pending review of the applicant's response by the staff. The staff's conclusions will be provided in a future supplement to this report.

Confirmatory Item 1

The matter regarding the onsite radiation monitoring and assessment systems is confirmatory.

Evaluation

The evaluation of the onsite radiation monitoring system is contained in Section 13.3.2.8 of this supplement. The evaluation of the assessment system is contained in the evaluation of the Open Item above. This confirmatory item is closed.

Confirmatory Item 2

The applicant has committed to provide curves of containment radiation monitor reading versus time for various scenarios (i.e., reactor coolant release, coolant and gap activity, 1% fuel inventory, and 10% fuel inventory) at a later time. This matter is confirmatory.

Evaluation

Section 10.3 of the plan has been revised to reference procedures that will include methods to evaluate potential doses based on accident scenarios including those stated above. However, the applicant has not identified the specific procedure(s) nor have the curves been furnished for staff review. This matter remains confirmatory.

13.3.2.10 Protective Response

Confirmatory Item

The plan commits to develop a predetermined protective action recommendation scheme as described in Appendix 1 to NUREG-0654, Revision 1 as clarified by Office of Inspection and Enforcement Information Notice 83-28, and to incorporate it into Procedures EP 1-4, "General Emergency," and EPI-20, "Protective Action Recommendations."

Evaluation

Procedures EP I-4 and I-20, incorporating the guidance of Appendix 1 to NUREG-0654, have been submitted by the applicant. These procedures will be reviewed during the onsite appraisal in August 1985. The staff finds the portion of the applicant's plan adequate.

13.3.2.11 Radiological Exposure Control

Confirmatory Item

The plan specifies that site evacuation criteria, protective action recommendation guidance, emergency worker exposure limits, and decontamination guidance to be used by emergency response personnel will be provided in the plan procedures.

Evaluation

Plan implementing procedures which cover the above emergency planning aspects have been submitted by the applicant. These procedures will be reviewed during the onsite appraisal in August 1985. The staff finds this portion of the applicant's plan adequate.

13.3.2.12 Medical and Public Health Support

Confirmatory Item

The applicant agreed to coordinate with Salem Memorial Hospital (SMH) and Radiation Management Corporation in finalizing the revisions to the SMH plan. This matter is confirmatory.

Evaluation

On February 7, 1985, the applicant submitted a revised SMH plan, Revision 4, dated October 1984. The staff has reviewed the revised SMH plan and finds that additional information/clarification is needed to properly interface the SMH plan with the Hope Creek emergency plan. This matter was discussed with the applicant on May 17, 1985. During this discussion the applicant committed to provide the information/clarification requested by the staff. The applicant confirmed this commitment in a letter dated May 30, 1985.

The staff finds the applicant's response acceptable. This matter remains confirmatory pending further changes to the SMH plan as agreed to by the applicant.

13.3.2.14 Exercises and Drills

Confirmatory Item (new)

A recent revision to Section 15.0 (Rev. 3, dated April 1, 1985) of the plan deleted previous commitments related to: 1) exercises at night, 2) biennial exercises classified as General Emergencies, 3) personnel accountability drills, and 4) emergency response callout drills. In addition, the pages of revised Section 15.0 were not marked to indicate that the deletions were made.

The above matter was discussed with the applicant on May 17, 1985. Based on the discussion, the applicant committed to provide the information requested by the staff and include it in the next revision to the plan. The applicant confirmed this commitment in a letter dated May 30, 1985. This matter is confirmatory pending the revision to the plan as agreed upon by the applicant.

13.3.2.15 Radiological Emergency Response Training

Confirmatory Item

A visitor's guide, similar to one currently used at Salem, will be used at Hope Creek. This matter is confirmatory.

Evaluation

A sample visitor's guide has been provided to the staff. Review of the final visitor's guide and its implementation will be conducted during the onsite emergency preparedness implementation appraisal at Hope Creek currently scheduled for August 1985. The results of this review will be included in an inspection report. This item is closed.

Confirmatory Item (new)

A recent revision to Section 16.0 (Rev. 6, dated April 1, 1985) of the plan deleted Table 16-1, "Summary of Training Program Applicability," which was a

matrix of specialized training by group function code keyed to plan organization charts. The staff had previously found the applicant's emergency preparedness training program adequate based, in part, on the description of the specialized training indicated by Table 16-1.

The above matter was discussed with the applicant on May 17, 1985. Based on the discussion, the applicant committed to include Table 16-1 in the next revision to the plan. This commitment was confirmed by the applicant in a letter dated May 30, 1985. This matter is confirmatory pending a revision to the plan as agreed upon by the applicant.

13.3.3 Federal Emergency Management Agency (FEMA) Review of State and Local Emergency Response Plans

In correspondence dated March 5, 1985, FEMA confirmed that a complete offsite plan finding based on offsite plans and preparedness will be furnished the NRC by September 15, 1985. FEMA's finding on offsite plans and exercise evaluations will be provided in a future supplement to this report, prior to authorization of Hope Creek operations above five percent of rated power.

13.3.4 Conclusions

On the basis of the staff's review of the applicant's plan, the staff concludes that, upon satisfactory completion of those items committed to the applicant as

identified in Section 13.3.2 of this supplement, the Hope Creek Generating Station radiological emergency plan will provide an adequate planning basis for an acceptable state of onsite emergency preparedness and will meet the requirements of 10 CFR 50, and Appendix E thereto. The staff will confirm that the applicant has complied with its commitments in a future supplement to this report following a review of the revision to the applicant's plan.

After reviewing the findings and determinations made by FEMA on the adequacy of State and local emergency response plans and prior to authorization to exceed 5% of rated power, a supplement to this report will provide the staff's overall conclusion as to whether the state of onsite and offsite emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.