PSEG Nuclear LLC
P.O Box 236, Hancocks Bridge, New Jersey 08038-0236

AUG 1 6 2002

LR-N02-0303
LCR S02-03

PSEG
Nuclear LLC

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Gentlemen:

ADDITIONAL INFORMATION
REQUEST FOR LICENSE AMENDMENT LCR S02-03
REFUELING OPERATIONS – FUEL DECAY TIME PRIOR TO COMMENCING CORE ALTERATIONS OR MOVEMENT OF IRRADIATED FUEL
SALEM GENERATING STATION, UNIT NOS. 1 AND 2
FACILITY OPERATING LICENSE DPR-70 AND DPR-75
DOCKET NOS. 50-272 AND 50-311

On August 12, 2002, the Nuclear Regulatory Commission (NRC) forwarded a request for additional information (RAI) in support of the NRC staff's review of the request for license amendment submitted by PSEG Nuclear LLC (PSEG) on June 28,2002 (LR-N02-0231). The amendment request proposes a reduction in the minimum required fuel decay time prior to commencing fuel movement for Salem Generating Station Unit Nos. 1 and 2. PSEG is providing the additional information requested in Attachment 1. Each request is restated, followed by PSEG's response.

Should you have any questions regarding this response, please contact Mr. Brian Thomas at (856) 339-2022.

Sincerely,

G. Salamon
Manager - Nuclear Safety and Licensing

A001

C Mr. H. J. Miller, Administrator - Region I
U. S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

U. S. Nuclear Regulatory Commission
Attn: Mr. R. Fretz
Licensing Project Manager - Salem
Mail Stop 08B2
Washington D.C. 20555-001

USNRC Senior Resident Inspector - Salem (X24)

Mr. K. Tosch, Manager IV
Bureau of Nuclear Engineering
P.O. Box 415
Trenton, NJ 08625

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LR-N02-0301
LCR S02-03

Attachment 1
Request for Additional Information.

1. Your submittal indicates that you have re-calculated control room X/O values using the NRC-sponsored ARCON96 computer code, a change in methodology over that previously used previously at Salem. The staff has determined that it needs additional information to evaluate your use of the ARCON96 code in order to determine if the calculated X/O values are acceptable for use in design basis calculations. Please provide the following information:

    1.1 A copy, on floppy disk or CD in the ARCON96 data format, the meteorological data used in the ARCON96 code runs.

    RESPONSE: Seven years of meteorological data for calendar years 1988 through 1994 were used in the analysis. The data is contained in the following computer files, which is being provided to the NRC Project Manager:

    CONMET88.MET
    CONMET89.MET
    CONMET90.MET
    CONMET91.MET
    CONMET92.MET
    CONMET93.MET
    CONMET94.MET

    1.2 A brief confirmation statement that these meteorological data were collected by a meteorological measurements program that meets the guidance of Safety Guide 23 and that is covered by a quality assurance program that meets the requirements of 10 CFR Part 50 Appendix B.

    RESPONSE: Confirmation that our meteorological monitoring program is in compliance with 10 CFR Part 50 Appendix B is provided in an internal memorandum from R. Yewdall to John Duffy dated April 12, 2002 (NRP-02-0021). The memorandum also identifies compliance with Technical Specification 6.8 and USNRC Regulatory Guide 1.33. A copy of the memorandum is enclosed.

    1.3 A tabulation of the ARCON96 inputs used in your analyses. A copy of the actual ARCON96 code input dumps is an acceptable means to provide this information. If the release has been modeled as other than a ground level release, please provide a technical basis for the treatment used.

control room using the ARCON96 code. The following ARCON96 computer files are provided:

SALEM11.cdf
SALEM11.log
SALEM11.RSF
SALEM12.cdf
SALEM12.log
SALEM12.RSF
SALEM21.cdf
SALEM21.log
SALEM21.RSF
SALEM22.cdf
SALEM22.log
SALEM22.RSF
SFHB11.cdf
SFHB11.log
SFHB11.RSF
SFHB12.cdf
SFHB12.log
SFHB12.RSF
SVENT11.cdf
SVENT11.log
SVENT11.RSF
SVENT12.cdf
SVENT12.log
SVENT12.RSF

All the releases were modeled as ground-level releases.

2. The discussion (page 8) of the FHA occurring in the FHB identifies three release pathways from the FHB-plant vent, truck bay, and gravity damper-and assigns three flow rates. The discussion implies that the assigned flow rates are based on the assumption of a failure of one FHB exhaust fan.

2.1 Please provide a brief explanation of how these flow rates were determined and the impact of not assuming FHB exhaust fan failure on these values.

RESPONSE: A discussion of the development of the flow rates is provided in Attachment 11.2 of Design Calculation S-C-ZZ-MDC-1920. The supply fan is assumed to be set at 2000 cfm less than the nominal flow rate for two exhaust fans (19,490 cfm) plus 10% (that is, 21,439 cfm). The 15,300 cfm flow rate for one exhaust fan was developed by plotting a system curve and determining the intercept with a vendor-supplied fan curve. The difference between the two flow rates (4139 cfm) is assumed to leak from the building through the truck bay door and the gravity damper. The 48" X 48" gravity damper leakage is developed based on a rating of 8 cfm per sq. ft. of face area and applying a factor of 2.

2(48")(48")(8 cfm/ft2)(1 sq. ft/144 sq. in.) = 256 cfm

The balance of the fan flow difference (3883 cfm) is assumed to leak through the truck bay door.

4139 cfm – 256 cfm = 3883 cfm

The flow rates are used to compute a composite atmospheric dispersion factor for releases from the building (1.85E-3 s/m^3).

Without exhaust fan failure the building would exhaust to the plant vent, for which the atmospheric dispersion factor value is 1.78E-3 s/m^3 vs. the 1.85E-3 s/m^3 value that is computed for the combination of release locations assumed with exhaust fan failure; therefore, the assumption of an exhaust fan failure is conservative.

2.2 Please provide a brief explanation of why you believe that the activity released from the pool might not be preferentially drawn to a particular exhaust path.

RESPONSE: Although we state in our submittal that activity would be released from either the plant vent or the rollup door, we believe that even with an exhaust fan failure the activity released would be preferentially drawn to the running exhaust fan and released through the plant vent. This is due to the proximity of the exhaust inlets to the pool and the suction at the inlets. Nevertheless, we have made an overall conservative modeling assumption that some of the activity is released due to leakage through the truck bay door (which has a lower atmospheric dispersion value than the plant vent) and gravity damper (which has a higher atmospheric dispersion value than the plant vent). Furthermore, our model does not credit any filtration prior to release.

2.3 The discussion on page 8 states that the analysis assumes a release rate of one FHB volume per minute. However, the table notes on page 11 states that the activity is released to the environment at a rate of 21,439 cfm. This flow rate implies a small value for the fuel handling building free volume. Please resolve the apparent inconsistency in these two statements. Also, please explain the parenthetical entry "(0.0 hr)" included with the EAB results in the two results tables.

RESPONSE: The discussion on page 8 indicates that the results of a parametric study indicate that a release over two hours yields a higher control room dose. The results are documented in Design Calculation S-C-ZZ-MDC-1920. They are 1.90 rem TEDE for a two-hour release (the result shown on page 11) and 8.72E-1 rem TEDE for a rapid release (one FHB volume per minute). For a two-hour release case a release rate of 21,439 cfm and a computed volume of 558,550 ft^3 were used in the model.

The parenthetical entry is intended to indicate that the worst two-hour dose period begins with initiation of the accident.

3. Your analyses assume a control room unfiltered in leakage of 4000 cfm. This appears to be an arbitrarily high value used in lieu of a measured value. Please state the basis of the 4000 cfm unfiltered inleakage assumed in your analyses and provide an explanation of why this value is expected to reasonably bound the actual in leakage.

RESPONSE: The nominal single-train fan flow rate is 8000 cfm. The makeup flow rate limit is 2200 cfm. The 4000 cfm value is an arbitrary value that reasonably bounds expected unfiltered inleakage. For comparison, at Hope Creek the inleakage rate in the pressurization mode was determined to be nominally about 200 cfm based on the results of a recent tracer gas test. The nominal single-train fan flow rate at Hope Creek is 4000 cfm, and the makeup flow rate limit is 1000 cfm.

TO: John F. Duffy
Nuclear Engineering Design

Gopal Patel
NUCORE

FROM: Robert F. Yewdall
Radiation Protection Support

SUBJECT: Artificial Island Meteorological Monitoring System
Data Quality Documentation
Compliance With 10CFR50 Appendix B

DATE: April 12, 2002
NRP-02-0021

The purpose of this memorandum is to document compliance with 10CFR50, Appendix B. The requirement for this documentation is provided in Attachment 1 to this memo.

Commitment to a quality meteorological monitoring program is provided in our license documents, specifically section 17 to both the Salem and Hope Creek UFSARs. We are in compliance with the requirements of Technical Specification 6.8 and USNRC Regulatory Guide 1.33.

A quality programs is assured by strict implementation of approved stations procedures. These procedures are:

- NC.RS-AP.MET-1201(Q) Meteorological Monitoring Program Administration
- NC.RS-SC.MET-1201(Q) Meteorological Monitoring System Calibration & Maintenance
- NC.RS-TI.MET-1201(Q) Meteorological Monitoring System Surveillance Instructions
- NC.RS-TI.MET-1202(Q) Meteorological System Operation/ Interrogation
- NC.RS-TI.MET-1203(Q) Meteorological Monitoring System Data Collection
- NC.RS-TI.MET-1204(Q) Meteorological Monitoring System Data Validation

The programs are monitored/ audited by the NRC during annual inspections as well as by QA assessments and self assessments.

If you have any questions with respect to data quality please contact me.

C B. Sebastian
R. Gary
K. O'Hare
J. Nagle
D. Kelly
L. Clark
F. Castelli
J. Southers
P. Bledsoe