March 14, 2002

Mr. J. S. Keenan
Vice President
Brunswick Steam Electric Plant
Carolina Power & Light Company
Post Office Box 10429
Southport, North Carolina 28461

SUBJECT: BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS TO IMPLEMENT TECHNICAL SPECIFICATION TASK FORCE TRAVELER ITEM 51, REVISION 2 (TAC NOS. MB2570 AND MB2571)

Dear Mr. Keenan:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 218 to Facility Operating License No. DPR-71 and Amendment No. 244 to Facility Operating License No. DPR-62 for Brunswick Steam Electric Plant (BSEP), Units 1 and 2. The amendments change the Technical Specifications (TS) in response to your submittal dated August 1, 2001, as supplemented February 4, 2002.

The amendments change the BSEP, Units 1 and 2 TS to incorporate NRC-approved Technical Specification Task Force (TSTF) Traveler Item 51, "Revise containment requirements during handling irradiated fuel and core alterations," Revision 2. The amendments selectively adopt the Alternate Source Term (AST) specifically for the fuel handling accident event. The balance of your August 1, 2001, request for full adoption of the AST will be evaluated in a separate letter.

In your August 1, 2001, letter you stated that CP&L would adopt the associated commitment in TSTF-51 to follow the NUMARC 91-06, " Guidelines for Industry Actions to Assess Shutdown Management," Section 4.5, for restoration capability for the secondary containment. CP&L additionally committed to revise BSEP guidelines for the assessment of systems removed from service during handling of irradiated fuel assemblies or core alterations, and to implement provisions of Section 11.3.6.5 of NUMARC 93-01 Rev. 3. These provisions address restoration capability of secondary containment to maintain defense-in-depth and release treatment and monitoring capabilities. Also in the August 1, 2001, letter, CP&L committed to revise plant procedures to manually initiate control room isolation within 20 minutes following a fuel handling accident. This commitment was discussed with your licensing staff on February 25, 2002.

A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's bi-weekly Federal Register Notice.

Sincerely,

/RA by J.Goshen Acting for/

Allen G. Hansen, Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-325 and 50-324

Enclosures:
1. Amendment No. 218 to License No. DPR-71
2. Amendment No. 244 to License No. DPR-62
3. Safety Evaluation

cc w/enclosures: See next page

A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's bi-weekly Federal Register Notice.

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CAROLINA POWER & LIGHT COMPANY

DOCKET NO. 50-325

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 218
License No. DPR-71

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment filed by Carolina Power & Light Company (the licensee), dated August 1, 2001, as supplemented February 4, 2002, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications, as indicated in the attachment to this license amendment; and paragraph 2.C.(2) of Facility Operating License No. DPR-71 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 218, are hereby incorporated in the license. Carolina Power & Light Company shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Richard P. Correia, Chief, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical Specifications

Date of Issuance: March 14, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 218

FACILITY OPERATING LICENSE NO. DPR-71

DOCKET NO. 50-325

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove Pages	Insert Pages
3.3-62	3.3-62
3.3-63	3.3-63
3.6-29	3.6-29
3.6-30	3.3-30
3.6-31	3.6-31
3.6-33	3.6-33
3.6-34	3.6-34
3.6-35	3.6-35
3.6-36	3.6-36

CAROLINA POWER & LIGHT COMPANY

DOCKET NO. 50-324

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 244
License No. DPR-62

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment filed by Carolina Power & Light Company (the licensee), dated August 1, 2001, as supplemented February 4, 2002, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications, as indicated in the attachment to this license amendment; and paragraph 2.C.(2) of Facility Operating License No. DPR-62 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 244, are hereby incorporated in the license. Carolina Power & Light Company shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/
Richard P. Correia, Chief, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical Specifications

Date of Issuance: March 14, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 244

FACILITY OPERATING LICENSE NO. DPR-62

DOCKET NO. 50-324

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove Pages	Insert Pages
3.3-62	3.3-62
3.3-63	3.3-63
3.6-29	3.6-29
3.6-30	3.3-30
3.6-31	3.6-31
3.6-33	3.6-33
3.6-34	3.6-34
3.6-35	3.6-35
3.6-36	3.6-36

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 218 TO FACILITY OPERATING LICENSE NO. DPR-71

AND AMENDMENT NO. 244 TO FACILITY OPERATING LICENSE NO. DPR-62

CAROLINA POWER & LIGHT COMPANY

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2

DOCKET NOS. 50-325 AND 50-324

1.0 INTRODUCTION

By letter dated August 1, 2001, as supplemented February 4, 2002, Carolina Power & Light Company (CP&L, the licensee) submitted a request for changes to the Brunswick Steam Electric Plant (BSEP), Units 1 and 2, Technical Specifications (TS) and associated Bases pages. The February 4, 2002, letter provided clarifying information only, and did not change the initial no significant hazards consideration determination or expand the scope of the initial *Federal Register* notice. The licensee proposed applying an Alternate Source Term (AST) for BSEP, Units 1 and 2, and to revise the TS to amend the operability requirements for the following Engineered Safety Features (ESF) components during core alterations and fuel handling activities:

Secondary Containment System,
Secondary Containment Isolation Instrumentation,
Secondary Containment Isolation Dampers,
Standby Gas Treatment System, and the
Control Room Emergency Ventilation System Isolation Instrumentation.

The amendments revise the BSEP TS only to incorporate NRC-approved Technical Specification Task Force (TSTF) Traveler Item 51, "Revise containment requirements during handling irradiated fuel and core alterations," Revision 2. The amendments selectively adopt the AST specifically for the Fuel Handling Accident (FHA) event. The balance of the licensee's August 1, 2001, request for full adoption of the AST will be evaluated in a separate letter.

2.0 BACKGROUND

The licensee states that the purpose of this request is to improve the performance of activities during refueling outages. With the current TS requirements, outage tasks must be interrupted as a result of equipment hatch closure due to core alterations and fuel handling activities. For example, moving large pieces of equipment into secondary containment must be stopped during core alterations, and this is expected to affect the critical path of the next outage. This results in work being delayed or rescheduled to less efficient times in the outage.
Also, the high level of modification, maintenance, and repair activities during outages increases the wear on the two airlock doors to the secondary containment, which results in increased repair cost. These repairs would also create a bottleneck situation for processing personnel

and equipment in and out of the secondary containment. Furthermore, the actual establishment of the containment boundary several times during an outage further restricts access and requires additional resources.

The elimination of the selected BSEP TS ESF requirements during core alterations and the movement of sufficiently decayed irradiated fuel is proposed using NRC-approved TSTF-51, Revision 2 to NUREG-1433, “Standard Technical Specifications General Electric Units, BWR/4,” as a model.

This Safety Evaluation addresses only the following portions of the August 1, 2001, amendment request, which are required to implement the TSTF-51 changes:

1. The AST implementation will be limited to the design basis FHA radiological consequence analysis performed to show compliance with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.67(b)(2).

2. Revised atmospheric dispersion factors related to release points and receptors associated with an FHA.

3. TS revisions of requirements for operability of secondary containment and the control room emergency ventilation system instrumentation. TS for

    - Secondary containment isolation instrumentation (3.3.6.2),

    - Control room emergency ventilation system instrumentation (3.3.7.1),

    - Secondary containment (3.6.4.1),

    - Secondary containment isolation dampers (3.6.4.2), and

    - Standby gas treatment system (3.6.4.3)

    establish operability requirements during certain operating modes and activities. CP&L proposes to relax these requirements by eliminating applicability during core alterations and movement of irradiated fuel assemblies.

3.0 EVALUATION

3.1 Description of Changes

The TS are being amended in order to revise the operability requirements for the above-mentioned ESF components during fuel handling of sufficiently decayed irradiated fuel and core alterations activities.

Evaluation

Following a reactor shutdown, the decay heat of the short-lived fission products greatly reduces the fission product inventory present in irradiated fuel. The proposed TS change takes advantage of a specific decay period to reduce the radionuclide inventory available for release in the event of an FHA. This specific decay period is calculated to be 24 hours. Following the

24-hour decay period, the primary success path for mitigating the FHA no longer includes the operability of these ESF components. The FHA is the bounding accident during fuel handling and core alterations. Fuel that has not decayed for 24 hours or longer is termed "recently irradiated fuel" and ESF features must remain operable when moving such fuel.

Applying the "recently irradiated fuel" concept to the various TS where the concept applies provides a mechanism for applying a minimum time for the fission product decay. The decay period of 24 hours has been shown by analysis to provide sufficient decay. Assuming the design basis FHA, radiological consequences are within the acceptance criteria of 10 CFR 50.67, "Accident Source Term" and Regulatory Guide (RG) 1.183, "Alternative Radiological Source Term for Evaluating Design Basis Accidents at Nuclear Power Reactors."

The elimination of the operability requirements for the control room isolation instrumentation will allow the use of manual, instead of automatic, initiation of control room isolation following an FHA.

CP&L has committed to meet the following TSTF-51 guidelines for systems removed from service during movement of irradiated fuel that has decayed for 24 hours or more and during core alterations:

- During fuel handling/core alterations, ventilation system and radiation monitor availability (as defined in NUMARC 91-06) should be assessed, with respect to filtration and monitoring of releases from the fuel. Following shutdown, radioactivity in the fuel decays away fairly rapidly. The basis of the Technical Specification operability amendment is the reduction in doses due to such decay. The goal of maintaining ventilation system and radiation monitor availability is to reduce doses even further below that provided by the natural decay.

- A single normal or contingency method to promptly close primary or secondary containment penetrations should be developed. Such prompt methods need not completely block the penetration or be capable of resisting pressure.

The purpose of the "prompt methods" mentioned above is to enable ventilation systems to draw the release from a postulated FHA in the proper direction such that it can be treated and monitored.

In the interim period until the revision of NUMARC 91-06 is endorsed as a formal industry position, BSEP will adopt provisions for controlling the removal from service of systems, structures and components that are currently required by TS during core alterations and irradiated fuel handling activities.

Furthermore, the proposed revisions are consistent with the surveillance requirements contained in NUREG-1433, and the staff finds them acceptable.

3.2 Amended Technical Specifications

The following Limiting Conditions for Operation (LCOs) are amended:

LCO 3.3.6.2 - Secondary Containment Isolation Instrumentation

LCO 3.3.7.1 - Control Room Emergency Ventilation System Instrumentation

LCO 3.6.4.1 - Secondary Containment

LCO 3.6.4.2 - Secondary Containment Isolation Dampers

LCO 3.6.4.3 - Standby Gas Treatment System

Evaluation

The proposed TS amendments eliminate the term “during CORE ALTERATIONS” and adds the term “recently” as a modifier of irradiated fuel (“recently irradiated fuel”). The amendments result in restricting the OPERABILITY requirement for these systems to the movement of recently irradiated fuel assemblies within the containment and operations with the potential for draining the reactor vessel. This operability restriction envelopes the situations that would require these systems to be operable in order to mitigate the consequences of an FHA. The proposed revisions to the TS do not result in changes to the design basis, and the staff finds them acceptable.

3.3 Probabilistic Risk Assessment Evaluation

3.3.1 Alternative Source Term

In December 1999, the NRC issued a new regulation, 10 CFR 50.67, “Accident Source Term,” which provided a mechanism for licensed power reactors to replace the traditional accident source term used in their design basis accident (DBA) analyses with ASTs. Regulatory guidance for the implementation of these ASTs is provided in RG 1.183, “Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors.” Section 50.67 requires a licensee seeking to use an AST to apply for a license amendment and requires that the application contain an evaluation of the consequences of affected DBAs. CP&L’s application addresses these requirements in proposing to use the AST described in RG 1.183 in evaluating the radiological consequences of an FHA. As part of the implementation of the AST, the total effective dose equivalent (TEDE) acceptance criterion of 10 CFR 50.67 (b)(2) replaces the previous whole body and thyroid dose guidelines of 10 CFR 100.11 and 10 CFR 50, Appendix A, General Design Criteria (GDC) 19 for the FHA only.

The staff reviewed the CP&L implementation of the AST to the FHA and found it to meet the requirements of 10 CFR 50.67 and the guidance provided in RG 1.183. Therefore, the staff finds CP&L’s selective AST implementation acceptable.

3.3.2 Radiological Consequences of a Design Basis Fuel Handling Accident

The objective of any DBA radiological analysis is to evaluate the performance of various plant safety systems intended to mitigate the postulated release of radioactive materials from the plant to the environment. Specifically, the DBA FHA is evaluated to demonstrate compliance with GDC-60, “Control of releases of radioactive materials to the environment,” and GDC-61, “Fuel storage and handling and radioactivity control.” The staff reviewed CP&L’s analysis description and performed confirmatory calculations. Analysis assumptions used by the staff are consistent with those used by the licensee and are tabulated in Table 1. The radiation doses reported by the licensee are tabulated in Table 2.

This accident analysis postulates that a spent fuel assembly is dropped during refueling. The kinetic energy developed in this drop is conservatively assumed to be dissipated in damage to the cladding on 172 fuel rods. The fission product inventory in the core is largely contained in the fuel pellets that are enclosed in the fuel rod clad. However, the volatile constituents of this inventory will migrate from the pellets to the gap between the pellets and the fuel rod clad. The fission product inventory in the fuel rod gap of the damaged fuel rods is assumed to be instantaneously released because of the accident. This activity is assumed to be released from the damaged fuel and the overlying fuel pool to the secondary containment building, from where it is assumed to be released to the environment. CP&L assumes that the activity is released to the environment from the reactor building vent as a ground level release. Although radiation monitors in the exhaust ducts from the refueling floor would automatically isolate the reactor building vent and actuate the standby gas treatment system (SGTS), these features may not be operable due to TS changes requested in this amendment request. If the reactor building vent fans were to be inoperable, there would be less of a force driving the release to the environment.

In modeling this accident, CP&L assumed that the release from the pool is mixed in an arbitrary 1,000,000 ft^3 volume of the secondary containment above the refueling floor and is released to the environment at a rate equal to 1.44×10^7 percent per day. CP&L modeled the release from the fuel as occurring at a linear rate over 2 hours. Regulatory guidance provides for an instantaneous release from the fuel followed by a release to the environment over 2 hours. CP&L's model is functionally equivalent in that the overall release and the overall release rate are unchanged and, therefore, acceptable.

CP&L assumed no credit for filtration by the SGTS. Fission products released from the damaged fuel are decontaminated by passage through the pool water, with the degree of decontamination depending on their physical and chemical form. CP&L assumed no decontamination for noble gases, a factor of 200 decontamination of radioiodines, and retention of all aerosol and particulate fission products.

CP&L used atmospheric dispersion (χ/Q) values that are different from those in the current licensing basis, and these are addressed in Section 3.3.3.

CP&L analyzed the control room doses over a 30-day period. CP&L analyzed the control room doses assuming manual initiation of control room isolation 20 minutes after an FHA. The 20-minute manual initiation time is reasonable, and has generally been accepted by the staff as a standard assumption for similar control room actions. Although the control room is designed to be pressurized during an accident event, CP&L assumes that unfiltered inleakage occurs. Since this inleakage has not been quantified, CP&L analyzed three cases, one with 10,000 cfm unfiltered inleakage, another with the design value of 3,000 cfm, and the last with no assumed unfiltered inleakage. The BSEP design unfiltered inleakage value of 3,000 cfm was based on pressurization testing, and was previously submitted to the NRC in 1985 as part of the evaluation of control room habitability. In 1989, the staff accepted this value as part of the basis for control room habitability acceptability. The licensee asserts that continued use of the design value of 3,000 cfm unfiltered inleakage is conservative in view of control room envelope boundary integrity improvements made in recent years. These improvements include sealing of heating, ventilation, and air conditioning (HVAC) duct joints, sealing of electrical conduit penetrations, and sealing of all control panel cable penetrations. The staff accepts this rationale given (1) the margin between the projected dose and the dose criterion, and (2) the relative change in dose between the 0 cfm and 10,000 cfm cases. The staff notes that it is currently developing regulatory guidance regarding control room habitability, including surveillance testing of unfiltered inleakage. In addition, the Nuclear Energy Institute (NEI) has developed an industry initiative document (NEI 99-03) on control room habitability. The staff's acceptance of CP&L's unfiltered inleakage assumption does not foreclose on any future generic regulatory actions that may become applicable to BSEP.

Based on its review of the CP&L analysis as described above and as confirmed by its independent analysis, the staff finds the CP&L analysis of the FHA and the reported results to be acceptable.

3.3.3 Atmospheric Relative Concentration Estimates

CP&L calculated new χ/Q estimates for the FHA dose assessment described above using onsite meteorological data collected during calendar years 1996 through 1999. These data were measured at 11.5 and 104.6 meters above grade at the BSEP site. The licensee confirmed that the meteorological measurement program meets the recommendations in RG 1.23, "Onsite Meteorological Programs." The tower area is free of natural vegetation and man-made structures that might otherwise influence meteorological measurements. Scheduled calibrations are performed on a semi-annual basis and wind and temperature instruments are replaced with systems traceable to National Institute of Science and Technology sensors. Data are accessed offsite daily and compared with other local observations. Plant personnel also log observations once every 12 hours. The onsite meteorological measurement system receives additional data observation because it is included in the scope of the Maintenance Rule. CP&L notes that the BSEP meteorological measurement system has maintained a data recovery rate of greater than 90 percent since a new system was installed in 1996. This includes years with data loss due to the passage of three hurricanes.

The staff performed a review of the meteorological data submitted by CP&L using the methodology described in NUREG-0917, "Nuclear Regulatory Commission Staff Computer Programs for Use with Meteorological Data." Further review was performed using a computer spreadsheet. The staff confirmed that the 4-year average joint data recovery rate of the submitted wind speed, wind direction, and atmospheric stability data used in the χ/Q estimates was greater than 90 percent. The length and time of occurrence of stable and unstable atmospheric conditions appeared reasonable, although the reported occurrence of stability class A (extremely unstable) in 1998 was relatively low. This may be due, in part, to the relative paucity of atmospheric stability data submitted for the month of June when a high occurrence of stability class A conditions would be expected. However, this should not significantly affect the χ/Q estimates for the FHA dose assessment.

CP&L calculated new χ/Q values using site-specific inputs and the PAVAN computer code for the Exclusion Area Boundary (EAB) and Low Population Zone (LPZ) and the ARCON96 code for the control room estimates. New values for various combinations of release points and receptors were generated and are tabulated in the August 1, 2001, submittal. This Safety Evaluation addresses only those data applicable to the FHA and tabulated in Tables 3-17 and 3-18 of the August 1, 2001, submittal. The PAVAN code, documented in NUREG/CR-2858, "PAVAN: An Atmospheric Dispersion Program for Evaluating Design Basis Accidental Releases of Radioactive Materials from Nuclear Power Plants," uses the methodology described in RG 1.145, "Atmospheric Dispersion Models for Potential Accident Consequence Assessments at Nuclear Power Plants." The licensee made calculations for an EAB distance of 3,000 feet and LPZ distance of 2 miles. Using the ARCON96 methodology (NUREG/CR-6331, Revision 1, “Atmospheric Relative Concentrations in Building Wake”), the licensee assumed a ground level point release from the reactor building vent to the control room intake.

The PAVAN and ARCON96 codes are acceptable methodologies. In a letter dated February 4, 2002 (SERIAL: BSEP 02-0019), CP&L provided copies of the input data printouts from PAVAN and ARCON96, and provided the meteorological data on magnetic media. The licensee stated that conservative minimum distances from the assumed release to receptor location were used. The staff qualitatively reviewed the inputs to the codes and found them to be consistent with site configuration drawings and other information in the BSEP Updated Final Safety Analysis Report and staff practice. Based on this review, the staff finds the new χ/Q values acceptable.

3.3.4 Proposed Technical Specification Changes

CP&L requested several TS changes that will relax requirements for the secondary containment and supporting systems to be operable during core alterations or movement of irradiated fuel.

The FHA radiological consequence analysis described above did not assume operability of the five affected systems listed in Section 2 above. Thus, the inoperability of these systems during an FHA cannot increase the potential radiation doses estimated by this revised analysis. Although the radiation doses at the EAB and the LPZ are projected to be greater than those currently documented in the BSEP licensing basis, the doses are still a small fraction of the dose criteria in 10 CFR 50.67(b)(2)(i) and (ii) and are, therefore, acceptable. The projected radiation dose to a control room operator was not previously analyzed for the FHA. The submitted analysis projects doses for the control room operators that meet the dose criteria in 10 CFR 50.67(b)(2)(iii) and GDC-19. The staff finds this acceptable.

The staff has traditionally and conservatively required the secondary containment systems to be operable during core alterations and movement of irradiated fuel within the secondary containment as a defense-in-depth measure to mitigate the consequences of the postulated FHA. Eliminating these operability requirements provides operational flexibility during refueling periods. Since the postulated doses, without these systems being operable, remain within regulatory criteria, the provisions of GDC-60 and GDC-61 continue to be satisfied. Similar relaxations have been approved for other boiling and pressurized water reactors and the staff has approved TSTF-51, Revision 2. In these applications, the staff has requested the licensee to make appropriate commitments to implement administrative means to facilitate restoration of the secondary containment should an FHA occur. CP&L has stated that they will adopt the associated commitment in TSTF-51 to follow the NUMARC 91-06, Section 4.5 guidelines on restoration of the secondary containment. The staff finds this commitment acceptable, and as such, finds the proposed TS changes acceptable.

TABLE 1

FUEL HANDLING ACCIDENT ANALYSIS ASSUMPTIONS

Reactor Power, MWt, (x 102%)	2923
Radial Peaking Factor	1.50
Fuel Decay Period, hours	24
Number of Assemblies in Core	560
Number of Fuel Rods in an Assembly (*equivalent full and part length rods*)	87.33
Number of Damaged Rods	172
Fraction of Gap Activity Released from Damaged Rods	1.0
Fraction of Core Inventory in Gap	
I-131	0.08
Kr-85	0.10
Other halogens and noble gases	0.05
Pool Decontamination Factor, Effective	200
Iodine Species Fraction Above Pool Water	
Elemental	0.57
Organic	0.43
Release Duration, hours	
From fuel and pool	Instantaneous
From secondary containment	2
Release Rate to Environment, %/day	1.44E+07[1]
Collection and Filtration by SGTS	None
Assumed Release Point	Reactor Building Vent
Atmospheric Dispersion, 0-2 hours, sec/m^3	
EAB	2.20E-03
LPZ	7.77E-04
Control Room	1.48E-03
Control Room Volume, ft^3	298,650
Control Room Normal Makeup, cfm	2100
Control Room Emergency Flow, cfm	1500
Control Room Emergency Recirculation Rate, cfm	400
Control Room Filter Efficiency, %	
Elemental	90
Organic	90
Aerosol	95
Control Room Unfiltered Inleakage, cfm	10,000
Control Room Isolation Delay, minutes	20

[1] 1.44E+07 = 1.44 x 10^7

TABLE 2

FUEL HANDLING ACCIDENT ANALYSIS DOSE RESULTS

	EAB TEDE *rem*	LPZ TEDE *rem*	Control Room TEDE *rem*
Licensee's Analysis Result	5.51	1.95	2.69
Regulatory Acceptance Criteria	6.25	6.25	5.0

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of North Carolina official was notified of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATIONS

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (66 FR 46477). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The staff has reviewed the selective AST implementation and the secondary containment and Control Room Emergency Ventilation (CREV) instrumentation TS changes proposed by CP&L for BSEP. In performing this review, the staff relied upon information placed on the docket by CP&L, staff experience in doing similar reviews and, where deemed necessary, on staff confirmatory calculations.

The staff reviewed the assumptions, inputs, and methods used by CP&L to assess the radiological impacts of the proposed changes. The staff finds that CP&L used analysis methods and assumptions consistent with the conservative guidance of RG 1.183. The staff compared the doses estimated by CP&L to the applicable criteria and to the results of confirmatory analyses performed by the staff. The staff finds, with reasonable assurance, that the licensee's EAB, LPZ, and control room estimates of the TEDE due to an FHA will comply with the requirements of 10 CFR 50.67.

The staff finds with reasonable assurance that AST implementation at BSEP will continue to provide sufficient safety margin with adequate defense-in-depth to address unanticipated events and to compensate for uncertainties in accident progression and in analysis assumptions and parameters, as they apply to the design basis FHA. The staff concludes that the proposed selective AST implementation and the proposed secondary containment and CREV instrumentation TS changes are acceptable.

This licensing action is considered a selective implementation of the AST. With the approval of this amendment, the AST, the TEDE criteria, and the analysis methods, assumptions, and inputs become the design basis for the assessment of radiological consequences of the design basis FHA. All future radiological analyses associated with the design basis FHA shall use this approved design basis. This approval is limited to this specific application. The staff continues to review the additional analyses provided by CP&L in support of the requested full-scope AST implementation. Until the staff completes this review and approves the remainder of the CP&L amendment request, the AST and TEDE criteria shall not be extended to other aspects of plant design or operation.

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner; (2) such activities will be conducted in compliance with the Commission's regulations; and, (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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