

March 30, 1987

DCA 014

Dockets Nos. 50-269, 50-270
and 50-287

Mr. Hal B. Tucker
Vice President - Nuclear Production
Duke Power Company
P. O. Box 33189
422 South Church Street
Charlotte, North Carolina 28242

| | |
|--------------|--------------------|
| Distribution | WJones |
| Docket File | LHarmon |
| NRC & LPDRs | TBarnhart+12 |
| HPastis | GEdition |
| PBD#6 files | RIgram |
| ACRS | CThomas |
| FMiraglia | EButcher |
| CMiles | JPartlow NThompson |
| OGC | EJordan |
| BGrimes | LFMB TMarsh |
| WRegan | OPA DCrutchfield |

Dear Mr. Tucker:

The Commission has issued the enclosed Amendments Nos. 156, 156, and 153 to Facility Operating Licenses Nos. DPR-38, DPR-47 and DPR-55 for the Oconee Nuclear Station, Units Nos. 1, 2 and 3. These amendments consist of changes to the Station's common Technical Specifications (TSs) in response to your request dated August 15, 1984.

These amendments revise the TSs to add limiting conditions for operation and surveillance requirements for the low temperature overpressure protection system. Other changes requested in your August 15, 1984 submittal concern the 1) minimum operator staffing requirements and 2) reactor building purge system. Item No. 1 was reviewed by a separate Safety Evaluation (SE) and approved by License Amendments Nos. 136, 136 and 133 issued on April 1, 1985. Item No. 2 was revised by proposed amendment request dated July 3, 1985, and we have resumed our review.

In its August 8, 1983 SE, the NRC requested that you propose TSs related to low temperature overpressurization protection. Your August 15, 1984, application is in partial response to this request. The NRC required six items in the TSs. You proposed only three and for the remaining three you state that you consider these to be unnecessary in that failure to perform the action does not create an unsafe condition. You consider makeup tank water level, core flood tank discharge valves, and operation of the last makeup pump to be essentially administrative and an unnecessary burden to the TSs. We have reviewed your application and agree that these three issues may be administratively controlled by operating procedures.

A copy of the Safety Evaluation is also enclosed. Notice of Issuance of the enclosed amendments will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/S/

John F. Stolz, Director
PWR Project Directorate #6
Division of PWR Licensing-B

Enclosures:

1. Amendment No. 156 to DPR-38
2. Amendment No. 156 to DPR-47
3. Amendment No. 153 to DPR-55
4. Safety Evaluation

*See previous white

cc w/enclosures:

See next page

PWR#6*
RIgram
3/18/87

PWR#6*
HPastis
3/18/87

PWR#6*
GEdition
3/19/87

AD*
DCrutchfield
3/17/87

RSB*
CThomas
2/20/87

PBEB*
TMarsh
3/10/87

PWR#6
JStolz
3/14/87

B704060171 870330
PDR ADDOCK 05000269
PDR

OGC
3/25/87

unacceptable their 500 psig PORV setpoint by basing it on pressure-temperature limit curves calculated in accordance with Appendix G of the ASME Code except that they (like Duke) used a safety factor of 1.0 rather than 2.0 as specified in the Code for the membrane stress-intensity factor. In correspondence with the NRC staff, SMUD provided information to justify utilizing the reduced safety factors on the basis that the Low Temperature Overpressure (LTOP) event is not an anticipated operational occurrence. In a February 25, 1985 letter, we stated that an LTOP event, which would violate the Appendix G pressure-temperature limits, should not be considered an anticipated operational occurrence. This conclusion should not be considered generic. It applies only to Oconee Units 1, 2 and 3, and to Rancho Seco. In summary, we conclude that the proposed PORV setpoints for LTOP to be adequate for maintaining reactor vessel integrity for a period of time corresponding to 15 Effective Full Power Years.

A copy of the Safety Evaluation is also enclosed. Notice of Issuance of the enclosed amendments will be included in the Commission's biweekly Federal Register notice.

Sincerely,

John F. Stolz, Director
PWR Project Directorate #6
Division of PWR Licensing-B

Enclosures:

- 1. Amendment No. to DPR-38
- 2. Amendment No. to DPR-47
- 3. Amendment No. to DPR-55
- 4. Safety Evaluation

cc w/enclosures:
See next page

*What's this?
JCS*

PWR#6/ji
RIngram
3/18/87

*AP concurred
PWR#6 (originally)
HPastis 3/18/87*

PWR#6
GEdison
3/19/87

RSB*
CThomas
2/20/87

PBEB*
TMarsh
3/10/87

PWR#6
JStolz
/ /87

AD*
DCrutchfield
3/17/87

OGC
/ /87

*See previous white for concurrence

unacceptable their 500 psig PORV setpoint by basing it on pressure-temperature limit curves calculated in accordance with Appendix G of the ASME Code except that they (like Duke) used a safety factor of 1.0 rather than 2.0 as specified in the Code for the membrane stress-intensity factor. In correspondence with the NRC staff, SMUD provided information to justify utilizing the reduced safety factors on the basis that the Low Temperature Overpressure (LTOP) event is not an anticipated operational occurrence. In a February 25, 1985 letter, we stated that an LTOP event, which would violate the Appendix G pressure-temperature limits, should not be considered an anticipated operational occurrence. Therefore, we also conclude that the proposed PORV setpoints for LTOP to be adequate for maintaining reactor vessel integrity for a period of time corresponding to 15 Effective Full Power Years.

A copy of the Safety Evaluation is also enclosed. Notice of Issuance of the enclosed amendments will be included in the Commission's biweekly Federal Register notice.

Sincerely,

John F. Stolz, Director
PWR Project Directorate #6
Division of PWR Licensing-B

Enclosures:

- 1. Amendment No. to DPR-38
- 2. Amendment No. to DPR-47
- 3. Amendment No. to DPR-55
- 4. Safety Evaluation

cc w/enclosures:
See next page

| | | | | | |
|-----------------------------|---------------------------------------|---------------------------|-------------------------------------|---------------------------|--------------------------|
| PWR#6 RIngram 2/10/87 | PWR#6 RPastis 2/1/87 | PWR#6 GEdison 1/187 | RSB CTomas 2/26/87 | PBEB TMarsh 3/10/87 | PWR#6 JStolz 1/187 |
| AB Douchfield 3/17/87 | OGC 1/187 | | | | |

Dockets Nos. 50-269, 50-270
and 50-287

Mr. Hal B. Tucker
Vice President - Nuclear Production
Duke Power Company
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422 South Church Street
Charlotte, North Carolina 28242

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| Docket File | WJones |
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| BGrimes | EJordan |
| TMarsh | LFMB |
| WRegan | NThompson |
| DCrutchfield | OPA |

Dear Mr. Tucker:

The Commission has issued the enclosed Amendments Nos. , , and to Facility Operating Licenses Nos. DPR-38, DPR-47 and DPR-55 for the Oconee Nuclear Station, Units Nos. 1, 2 and 3. These amendments consist of changes to the Station's common Technical Specifications (TSs) in response to your request dated August 15, 1984.

These amendments revise the TSs to add limiting conditions for operation and surveillance requirements for the low temperature overpressure protection system. Other changes requested in your August 15, 1984 submittal concern the 1) minimum operator staffing requirements and 2) reactor building purge system. Item No. 1 was reviewed by a separate Safety Evaluation (SE) and approved by License Amendments Nos. 136, 136 and 133 issued on April 1, 1985. Item No. 2 was revised by proposed amendment request dated July 3, 1985, and we have resumed our review.

In its August 8, 1983 SE, the NRC requested that you propose TSs related to low temperature overpressurization protection. Your August 15, 1984, application is in partial response to this request. The NRC required six items in the TSs. You proposed only three and for the remaining three you state that you consider these to be unnecessary in that failure to perform the action does not create an unsafe condition. You consider makeup tank water level, core flood tank discharge valves, and operation of the last makeup pump to be essentially administrative and an unnecessary burden to the TSs. We have reviewed your application and agree that these three issues may be administratively controlled by operating procedures.

Our August 8, 1983 letter and SE stated that two aspects of the review were under evaluation. The electrical instrumentation and control aspects of the issue can be considered resolved. The second aspect involved your letter dated July 6, 1982, in which you provided a pressure-temperature curve for use with the Oconee overpressurization protection system that removes some of the safety factors included in Appendix G (10 CFR Part 50) curve calculations. Sacramento Municipal Utility District (SMUD) proposed curves for Rancho Seco using the same techniques as Duke Power Company. Your July 6, 1982 curves were approved on March 11, 1983, by Amendments Nos. 119, 119 and 116. Subsequently, in an October 21, 1983, letter to SMUD, we stated that we found

Mr. H. B. Tucker
Duke Power Company

Oconee Nuclear Station
Units Nos. 1, 2 and 3

cc:
Mr. A. V. Carr, Esq.
Duke Power Company
P. O. Box 33189
422 South Church Street
Charlotte, North Carolina 28242

Duke Power Company
Post Office Box 33189
422 South Church Street
Charlotte, North Carolina 28242

J. Michael McGarry, III, Esq.
Bishop, Liberman, Cook, Purcell & Reynolds
1200 Seventeenth Street, N.W.
Washington, D.C. 20036

Mr. Robert B. Borsum
Babcock & Wilcox
Nuclear Power Generation Division
Suite 220, 7910 Woodmont Avenue
Bethesda, Maryland 20814

Manager, LIS
NUS Corporation
2536 Countryside Boulevard
Clearwater, Florida 33515

Senior Resident Inspector
U.S. Nuclear Regulatory Commission
Route 2, Box 610
Seneca, South Carolina 29678

Regional Administrator
U.S. Nuclear Regulatory Commission
101 Marietta Street, N.W.
Suite 3100
Atlanta, Georgia 30303

Mr. Heyward G. Shealy, Chief
Bureau of Radiological Health
South Carolina Department of Health
and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Office of Intergovernmental Relations
116 West Jones Street
Raleigh, North Carolina 27603

Honorable James M. Phinney
County Supervisor of Oconee County
Walhalla, South Carolina 29621



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

DUKE POWER COMPANY

DOCKET NO. 50-269

OCONEE NUCLEAR STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 156
License No. DPR-38

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Duke Power Company (the licensee) dated August 15, 1984, 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 3.B of Facility Operating License No. DPR-38 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 156 are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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P PDR

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


John F. Stolz, Director
PWR Project Directorate #6
Division of PWR Licensing-B

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 30, 1987



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

DUKE POWER COMPANY

DOCKET NO. 50-270

OCONEE NUCLEAR STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 156
License No. DPR-47

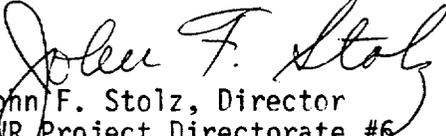
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Duke Power Company (the licensee) dated August 15, 1984, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations 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 3.B of Facility Operating License No. DPR-47 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 156 are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


John F. Stolz, Director
PWR Project Directorate #6
Division of PWR Licensing-B

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 30, 1987



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

DUKE POWER COMPANY

DOCKET NO. 50-287

OCONEE NUCLEAR STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 153
License No. DPR-55

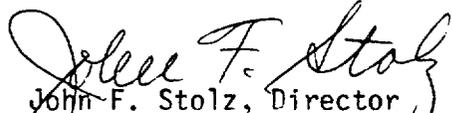
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Duke Power Company (the licensee) dated August 15, 1984, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations 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 3.B of Facility Operating License No. DPR-55 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 153 are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


John F. Stolz, Director
PWR Project Directorate #6
Division of PWR Licensing-B

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 30, 1987

ATTACHMENTS TO LICENSE AMENDMENTS

AMENDMENT NO. 156 TO DPR-38

AMENDMENT NO. 156 TO DPR-47

AMENDMENT NO. 153 TO DPR-55

DOCKETS NOS. 50-269, 50-270 AND 50-287

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by amendment numbers and contain vertical lines indicating the area of change.

| <u>Remove Pages</u> | <u>Insert Pages</u> |
|---------------------|---------------------|
| 3.1-3a | 3.1-3a |
| 3.1-5 | 3.1-5 |
| 4.2-2 | 4.2-2* |

*overleaf page provided to maintain document completeness

- 3.1.2.7 Prior to exceeding fifteen (Unit 1)
fifteen (Unit 2)
fifteen (Unit 3)

effective full power years of operation.

Figures 3.1.2-1A (Unit 1), 3.1.2-2A (Unit 1)
3.1.2-1B (Unit 2), 3.1.2-2B (Unit 2)
3.1.2-1C (Unit 3), 3.1.2-2C (Unit 3)

and 3.1.2-3A (Unit 1)
3.1.2-3B (Unit 2)
3.1.2-3C (Unit 3)

and Technical Specification 3.1.2.1, 3.1.2.2 and 3.1.2.3 shall be updated for the next service period in accordance with 10 CFR 50, Appendix G, Section V.B. and V.E.

- 3.1.2.8 The updated proposed technical specification referred to in 3.1.2.7 shall be submitted for NRC review at least 90 days prior to the end of the service period for Units 1, 2 and 3.

- 3.1.2.9 When the temperature of one or more of the RCS cold legs is less than or equal to 325°F, except when the reactor vessel head is removed, then at least one of the following low temperature overpressure protection systems shall be operable:

- a. Both Train A and Train B of HP injection shall be inoperable by:
 1. For Train A by shutting and deactivating valves HP-26, -409, and -410 by tagging open the valve breakers and tagging the valves in the closed position, or by deactivating pumps HP-A and HP-B and tagging the pump breakers open.
 2. For Train B by shutting and deactivating valves HP-27 and -409 by tagging open the valve breakers and tagging the valves in the closed position, or by deactivating pump HP-C and tagging the pump breaker open.
- b. The power operated relief valve (PORV) with a lift setting, of less than or equal to 500 psig, a steam bubble or nitrogen blanket in the pressurizer with a pressurizer level less than or equal to 260 inches, and an RCS pressure less than 400 psig.

If neither overpressure protection system is operable then within 1 hour restore at least one system to operable status, or depressurize and establish an RCS vent equivalent to 1 inch ID within the next 12 hours.

- c. In the event either the PORV or the RCS vent equivalent to 1 inch ID is used to mitigate an RCS pressure transient, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.6.3 within 30 days. The report shall describe the circumstances initiating the transient, the effect of the PORVs or vent(s) on the transient and any corrective action necessary to prevent recurrence.

limitations of 110°F and 237 psig are based on the highest estimated RT_{NDT} of +40°F and the preoperational system hydrostatic test pressure of 1312 psig. The average metal temperature is assumed to be equal to or greater than the coolant temperature. The limitations include margins of 25 psi and 10°F for possible instrument error.

The requirements to perform leakage tests of systems outside of containment which could potentially contain radioactivity were established by the NRC following TMI. Oconee performs the leak test of LPI by establishing RCS pressure at about 300 psig and with LPI at this same pressure, checking for leakage. Such a test is within the scope of testing upon which the curves referenced in Specification 3.1.2.2 are based--that is, they are not routine evolutions, such as heatup and cooldown, but rather infrequent leak tests conducted on a refueling outage basis. As such, the hydrostatic/leak test pressure-temperature limitations are applicable for the RCS when performing leak tests of the LPI system.

The spray temperature difference is imposed to maintain the thermal stresses at the pressurized spray line nozzle below the design limit.

The low temperature overprotection systems for Oconee consist of either deactivating both trains of high pressure injection or by having the PORV operable with the condition of the RCS as specified. If either of these is inoperable, the RCS must be depressurized and a vent path equivalent to the PORV flow capability established.

REFERENCES

- (1) Analysis of Capsule OCII-A from Duke Power Company Oconee Unit 2 Reactor Vessel Materials Surveillance Program, BAW-1699, December 1981.
- (2) Analysis of Capsule OCIII-B from Duke Power Company Oconee Unit 3 Reactor Vessel Materials Surveillance Program, BAW-1697, October 1981.
- (3) Analysis of Capsule OCI-E from Duke Power Company Oconee Unit 1 Reactor Vessel Materials Surveillance Program, BAW-1436, September 1977.

4.2 STRUCTURAL INTEGRITY OF ASME CODE CLASS 1, 2 AND 3 COMPONENTS

Applicability

Applies to the surveillance of the ASME Code Class 1, 2 and 3 components.

Objective

To assure the continued structural integrity of the ASME Code Class 1, 2 and 3 components.

Specification

- 4.2.1 Inservice examination of ASME Code Class 1, 2 and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by 10 CFR 50, Section 50.55a(g)(4), to the extent practicable within the limitations of design, geometry and materials of construction of the components, except where specific written relief has been granted by the Commission.
- 4.2.2 To assure the structural integrity of the reactor internals throughout the life of the unit, the two sets of main internals bolts (connecting the core barrel to the core support shield and to the lower grid cylinder) shall remain in place and under tension. This will be verified by visual inspection to determine that the welded bolt locking caps remain in place. All locking caps will be inspected after hot functional testing and whenever the internals are removed from the vessel during a refueling or maintenance shutdown. The core barrel to core support shield caps will be inspected each refueling shutdown.
- 4.2.3 At approximately three-year intervals, the bore and keyway of each reactor coolant pump flywheel shall be subjected to an in-place, volumetric examination. Whenever maintenance or repair activities necessitate flywheel removal, a surface examination of exposed surfaces and a complete volumetric examination shall be performed if the interval measured from the previous such inspection is greater than 6 2/3 years.

4.2.4 The reactor vessel material irradiation surveillance specimens removed from Units 1, 2 and 3 reactor vessels in 1976 shall be installed, irradiated in and withdrawn from the Crystal River Unit 3 reactor vessel in accordance with the schedule shown in Table 4.2-1. Following withdrawal of each capsule listed in Table 4.2-1, Duke Power Company shall be responsible for testing the specimens in those capsules and submitting a report of test results in accordance with 10 CFR 50, Appendix H.

4.2.5 The licensee shall submit a report or application for license amendment to the NRC within 90 days after the occurrence of the following: After March 13, 1978, any time that Crystal River Unit No. 3 fails to maintain a cumulative reactor utilization factor of greater than 45%.

The report shall provide justification for continued operation of Oconee Nuclear Station Units 1, 2 and 3 with the reactor vessel surveillance program conducted at Crystal River Unit No. 3 or the application for license amendment shall propose an alternate program for conduct of the reactor vessel surveillance program.

4.2.6 The power operated relief valve (PORV) is used for low temperature overpressure protection of the RCS and shall be demonstrated operable by:

- a. Performing an operability test prior to each startup from cold shutdown.
- b. Performing a calibration of the actuation circuit each refueling outage.
- c. Performing an inspection of the PORV at least once every two refueling cycles.

4.2.7 Each shift, the RCS vent(s) (as defined in Specification 3.1.2.9) shall be verified to be open, if the vent(s) is(are) being used for overpressure protection. If the vent pathway is provided with a valve which is locked, sealed, or otherwise secured in the open position, then these valves will open at least once per 31 days.

Bases

The surveillance program has been developed to comply with the applicable edition of Section XI and addenda of the ASME Boiler and Pressure Vessel Code, Inservice Inspection of Nuclear Reactor Coolant Systems, as required by 10 CFR 50.55(a) to the extent practicable within limitations of design, geometry and materials of construction. The program places major emphasis on the area of highest stress concentrations and on areas where fast neutron irradiation might be sufficient to change material properties.

The number of reactor vessel specimens and the frequencies for removing and testing these specimens are provided to assure compliance with the requirements of Appendix H to 10 CFR Part 50.

For the purpose of Technical Specification 4.2.5. Cumulative reactor utilization factor is defined as: $\{(Cumulative\ thermal\ megawatt\ hours\ since\ attainment\ of\ commercial\ operation\ at\ 100\% \ power) \times 100\} + \{(licensed\ thermal\ power) \times (cumulative\ hours\ since\ attainment\ of\ commercial\ operation\ at\ 100\% \ power)\}$. The definition of Regulatory Guide 1.16, Revision 4 (August 1975) applies for the term "commercial operation".



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 156 TO FACILITY OPERATING LICENSE NO. DPR-38

AMENDMENT NO. 156 TO FACILITY OPERATING LICENSE NO. DPR-47

AMENDMENT NO. 153 TO FACILITY OPERATING LICENSE NO. DPR-55

DUKE POWER COMPANY

OCONEE NUCLEAR STATION, UNITS NOS. 1, 2, AND 3

DOCKETS NOS. 50-269, 50-270 AND 50-287

1.0 Introduction

By letter dated August 15, 1984, Duke Power Company (the licensee) proposed changes to the Technical Specifications (TSs) of Facility Operating Licenses Nos. DPR-38, DPR-47 and DPR-55 for the Oconee Nuclear Station, Units Nos. 1, 2 and 3. These amendments would consist of changes to the Station's common TSs. The current proposed amendments would authorize changes to the TSs to add limiting conditions for operation and surveillance requirements for the low temperature overpressure protection (LTOP) system. By letter and Safety Evaluation (SE) dated August 8, 1983, the NRC staff approved the LTOP system for Oconee but requested certain changes to the TSs. The August 15, 1984 application is in partial response to that request.

Other changes requested in the August 15, 1984, submittal concern the 1) minimum operator staffing requirements and 2) reactor building purge system. Item No. 1 was reviewed by a separate SE and approved by License Amendments Nos. 136, 136 and 133 issued on April 1, 1985. Item No. 2 was revised by proposed amendment request dated July 3, 1985, and we have resumed our review.

2.0 Discussion

The August 8, 1983, SE approved the LTOP but required a number of provisions for prevention of pressure transients to be incorporated into the plant operating procedures. The SE also requested that these provisions and the pilot-operated relief valve (PORV) setpoint be included in the TSs. These provisions include:

1. The Oconee Overpressure Protection System is to be manually enabled prior to the reactor coolant system temperature dropping below 325°F during plant cooldown.

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PDR ADOCK 05000269
P PDR

2. The plant is to be operated with a steam or nitrogen blanket in the pressurizer at all times except for system hydrostatic tests. At system pressures above 100 psig the pressurizer water level is maintained at or below the level corresponding to the high level alarm. At system pressures less than or equal to 100 psig the pressurizer water level is maintained below the level corresponding to the high high level alarm.
3. The makeup tank water level is to be maintained below the level corresponding to the high level alarm.
4. The core flood tank discharge valves are closed and the circuit breakers for the motor operators are "racked out" before the Reactor Coolant System (RCS) pressure is decreased to 600 psig.
5. During a plant cooldown, the Engineered Safeguard Actuation of the High Pressure Injection (HPI) System is bypassed at 1750 psig. Prior to going below 325°F, the circuit breakers for the four HPI motor operated valves are "locked out" with the valves in the closed position.
6. The operating makeup pump is to be secured when the last reactor coolant pump is secured.

The licensee proposed changes to the TSs for items 1, 2 and 5 above. Items 3, 4 and 6 were not addressed. In his submittal, the licensee stated that he considers these three as unnecessary in that failure to perform the action does not create an unsafe condition. The staff agrees with this statement. He considers these items to be administrative and an unnecessary burden to the TSs. The NRC staff has reviewed the licensee's letter and agrees that maximum tank water level, core flood tank discharge valves and operation of the last makeup pump may be administratively controlled by operating procedures.

Several instances of reactor vessel overpressurization have occurred in pressurized water reactors (PWRs) that have caused the TS limits implementing Appendix G to 10 CFR Part 50 to be exceeded. These limits are pressure-temperature curves. These incidents generally occur during cold shutdown while the primary system was in a water-solid condition. At relatively low temperatures, the reactor vessel material toughness, i.e., resistance to brittle fracture, is reduced from that which exists at normal operating temperature and where the primary system is completely filled with water, i.e., in a "water-solid" condition.

The NRC staff requested the licensee, along with other PWR licensees, to determine susceptibility to overpressurization events and perform an analysis of these possible events, and required the licensee to propose interim and permanent modifications to the systems and procedures to reduce the likelihood and consequences of such events.

Along with interim measures, the hardware changes involved the installation of a dual setpoint on the pressurizer PORV. This dual setpoint feature enables the setpoint of the PORV to be reduced to 500 psig upon reducing the RCS temperature to 325°F. For plants (like Oconee) where Babcock and Wilcox

(B&W) is the Nuclear Steam System Supplier, a primary factor concerning overpressure protection is that they always (except hydro tests) maintain a steam or gas volume in the pressurizer which retards the pressure increase and allows time for operators to take action to terminate the pressure increase before exceeding any limits. Operating with a vapor space precludes the plant from being in a water-solid condition, allows the operator time to respond to a pressure transient and is therefore considered a prime subsystem.

The active subsystem uses the pressurizer PORV which provides high pressure protection during normal plant operation. The PORV actuation circuitry has been modified to provide a second, lower setpoint (500 psig) that is used during low-temperature operations. The low setpoint is manually enabled at 325°F by positioning a key-operated switch in the control room.

3.0 Evaluation

The proposed changes to the TSs include the following:

1. Updating and submitting for approval the pressure limit curves as the ductility of the pressure vessel decreases with core life;
2. Enabling the LTOPS prior to cooling the RCS below 325°F;
3. Having a low temperature setpoint of 500 psig on the PORV;
4. Having a steam bubble or nitrogen blanket in the pressurizer with a pressurizer level less than or equal to 260 inches, and an RCS pressure less than 400 psig when the RCS is less than or equal to 325°F;
5. Deactivating both trains of the HPI System when the RCS is at or below 325°F;
6. Performing an operability test on the PORV prior to each startup from cold shutdown;
7. Performing a calibration of the actuation circuit each refueling outage; and
8. Performing an inspection of the PORV at least once every two refueling cycles.

We have reviewed the proposed changes to the TSs and find them acceptable.

4.0 Environmental Consideration

These amendments involve a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. We have 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 these amendments involve no significant hazards

consideration and there has been no public comment on such finding. Accordingly, these 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 these amendments.

5.0 Conclusion

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Dated: March 30, 1987

Principal Contributors: H. Pastis, E. Lantz