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NewYorkPower Authority

October 12, 2000
JPN-00-040

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, D.C. 20555

SUBJECT: James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333
Page Changes for Proposed Change to the Technical Specifications
Regarding Laboratory Testing of Nuclear-Grade Charcoal (JPTS-99-006)

References: See below.

Dear Sir:

The Authority submitted a proposed Amendment (Reference 1) to the James A. FitzPatrick Technical Specifications (TS) to adopt the surveillance test methods and performance criteria detailed in NRC Generic Letter (GL) 99-02 (Reference 2 and 3) for laboratory testing of nuclear-grade charcoal. This letter transmits FitzPatrick TS pages for References 2 and 3 updated to reflect the recent issuance of TS Amendment 261 (References 4 and 5).

Specifically,

- The changes proposed to Appendix A pages 285 and 285a are not necessary;
- The changes proposed to Appendix B page 1 are not necessary; and
- Updates to Appendix A pages 191 and 193 are necessary to reflect the issuance of TS Amendment 261.

The Authority has reviewed the changes proposed in this letter and has determined that these changes do not affect the bases or conclusions of the no significant hazards considerations described in the original application (Reference 1). The changes reflect implementation of Amendment 261 and are therefore, administrative in nature.

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Attachments I, II, and III are updated TS pages, description of the page changes, and a mark-up of the affected pages, respectively.

There are no new commitments contained in this letter. If you have any questions, please contact Ms. C. Faison.

Very truly yours,

Harry P. Salmon, Jr.
Vice President Engineering

GERALDINE STRAND
Notary Public, State of New York
No. 4991272
Qualified in Westchester County
Commission Expires Jan. 27, 2002

Geraldine Strand
Notary Public

STATE OF NEW YORK
COUNTY OF WESTCHESTER
Subscribed and sworn to before me
this 12th day of October 2000.

References, cc and List of Attachments: next page.

References:

1. NYPA Letter, J. Knubel to the NRC, "Proposed Change to the Technical Specifications (JPTS-99-006) Laboratory Testing of Nuclear-Grade Charcoal 180 Day Response to NRC Generic Letter 99-02," (JPN-99-039), dated November 19, 1999.

2. NRC Generic Letter 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999.

3. NRC Generic Letter 99-02 (Errata), "Laboratory Testing of Nuclear Grade activated Charcoal," dated August 23, 1999.

4. NRC letter, G. S. Vissing to NYPA, "Issuance of Amendment Re: Changes to the Technical Specifications Regarding The Allowed Containment Leakage Rate (TAC No. MA1136)," dated April 14, 2000.

5. NRC letter, G. S. Vissing to NYPA, "Correction to Amendment No. 261 Issued on April 14, 2000 (TAC No. MA8783)," dated May 11, 2000.

Attachments:

I. Updated Page Changes For Proposed Change To The Technical Specifications Regarding Laboratory Testing Of Nuclear-Grade Charcoal (JPTS-99-006)

II. Description of Updated Page Changes

III. Markup Of Updated Page Changes

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

Office of the Resident Inspector
U.S. Nuclear Regulatory Commission
P.O. Box 136
Lycoming, New York 13093

Mr. Guy Vissing, Project Manager
Project Directorate I
Division of Licensing Project Management
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Mail Stop 8C2
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Mr. F. William Valentino, President
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Attachment I to JPN-00-040

UPDATED PAGE CHANGES FOR PROPOSED CHANGE TO THE TECHNICAL SPECIFICATIONS REGARDING LABORATORY TESTING OF NUCLEAR-GRADE CHARCOAL (JPTS-99-006)

Includes replacement pages 191 and 193 of the
FitzPatrick Technical Specifications (Appendix A to the Operating License)

New York Power Authority

JAMES A. FITZPATRICK NUCLEAR POWER PLANT
Docket No. 50-333
DPR-59

3.7 BASES (cont'd)

complete containment system, secondary containment is required at all times that primary containment is required as well as during refueling.

The Standby Gas Treatment System is designed to filter and exhaust the reactor building atmosphere to the main stack during secondary containment isolation conditions with a minimum release of radioactive materials from the reactor building to the environs. Both standby gas treatment fans are designed to automatically start upon containment isolation; however, only one fan is required to maintain the reactor building pressure at approximately a negative 1/4 in. water gage pressure; all leakage should be in-leakage. Each of the two fans has 100 percent capacity. If one Standby Gas Treatment System circuit is inoperable, the other circuit must be verified operable daily. This substantiates the availability of the operable circuit and results in no added risk; thus, reactor operation or refueling operation can continue. If neither circuit is operable, the Plant is brought to a condition where the system is not required.

While only a small amount of particulates is released from the Pressure Suppression Chamber System as a result of the loss-of-coolant accident, high-efficiency particulate filters are specified to minimize potential particulate release to the environment and to prevent clogging of the iodine filter. The high-efficiency filters have an efficiency greater than 99 percent for particulate matter larger than 0.3 micron. Filter banks will be replaced whenever significant changes in filter efficiency occur. Tests (11) of impregnated charcoal identical to that used in the filters indicated that shelf life up to 5 yr. leads to only minor decreases in methyl iodine removal efficiency.

The analysis of the design basis loss-of-coolant accident assumed a charcoal efficiency of 90% for the SBGT system and source term provided by GE based on NEDO-10871. The assumed 90% efficiency is sufficient to prevent exceeding 10 CFR 100 guidelines for the accident analyzed. A heater maintains relative humidity below 70% in order to assure the efficient removal of methyl iodine on the impregnated charcoal filters. The particulate filters are tested to acceptance criteria of 99% efficiency. Surveillance tests of the activated charcoal are based on NRC Generic Letter (GL) 99-02 guidelines. This GL requires testing in accordance with ASTM D3803-1989. Because this standard is more accurate and demanding than older tests, utilizing a safety factor as low as two for determining the acceptance criteria for charcoal efficiency is acceptable. This safety factor ensures that the charcoal filter efficiency assumed in the accident analysis is still valid at the end of the operating cycle. Based on the analysis of the design basis loss-of-coolant accident, which assumes a charcoal efficiency of 90% for the SBGT system, and a safety factor of two, the acceptance criteria for charcoal filter efficiency is 95% (5% allowable penetration). These values are determined using the following formula:

$$P_{TEST} = (100 - E_a) / F_s$$

Where:

P_{TEST} = Maximum allowable penetration by test
E_a = Charcoal filter efficiency used in accident analysis
F_s = Safety Factor

4.7 BASES

A. Primary Containment

The water in the suppression chamber is used only for cooling in the event of an accident; i.e., it is not used for normal operation; therefore, a daily check of the temperature and volume is adequate to assure that adequate heat removal capability is present.

The primary containment preoperational test pressures are based upon the calculated primary containment pressure response corresponding to the design basis loss-of-coolant accident. The peak drywell pressure would be about 45 psig which would rapidly reduce to 27 psig within 30 sec. following the pipe break. Following the pipe break, the suppression chamber pressure rises to 26 psig within 30 sec, equalizes with drywell pressure and thereafter rapidly decays with the drywell pressure decay (14).

The design pressure of the drywell and suppression chamber is 56 psig(15). The design basis accident leakage rate is 1.5 percent/day at a pressure of 45 psig. As pointed out above, the drywell and suppression chamber pressure following an accident would equalize fairly rapidly. Based on the primary containment pressure response and the fact that the drywell and suppression chamber function as a unit, the primary containment will be tested as a unit rather than the individual components separately.

Design basis accidents were evaluated as discussed in Section 14.6 of the FSAR and the power uprate safety evaluation, Reference 18. The whole body and thyroid doses in the control room, low population zone (LPZ) and site boundary meet the requirements of 10 CFR Parts 50 and 100. The technical support center (TSC), not designed to these licensing bases, was also analyzed. The whole body and thyroid dose acceptance criteria used for the main control room are met for the TSC when initial access to the TSC and occupancy of certain areas in the TSC is restricted by administrative control. The LOCA dose evaluations, References 19, 20, and 21 assumed: the primary containment leak rate (including MSIV leakage) was 1.5 volume percent per day; the source term releases were in accordance with Regulatory Guide 1.3 and were consistent with the Standard Review Plan; and the standby gas treatment system filter efficiency was 90% for halogens. Thyroid doses were calculated using the dose conversion factors in ICRP-30. These doses are also based on the

Attachment II to JPN-00-040

DESCRIPTION OF UPDATED PAGE CHANGES

The Authority submitted a proposed Amendment (Reference 1) to the James A. FitzPatrick Technical Specifications (TS) to adopt the surveillance test methods and performance criteria detailed in NRC Generic Letter (GL) 99-02 (Reference 2 and 3) for laboratory testing of nuclear-grade charcoal. This letter transmits FitzPatrick TS pages for References 2 and 3 updated to reflect the recent issuance of TS Amendment 261 (References 4 and 5).

Specifically,

- The changes proposed to Appendix A pages 285 and 285a are not necessary;
- The changes proposed to Appendix B page 1 are not necessary; and
- Updates to TS Pages 191 and 193 are necessary to reflect the issuance of TS Amendment 261.

Pages 285 and 285a of Appendix A - Technical Specifications

The changes to pages 285 and 285a (Appendix A) proposed in Reference 1 are not necessary because identical changes were included in Amendment 261 (References 4 and 5).

Appendix B - Radiological Environmental Technical Specifications

The changes to page 1 (Appendix B) proposed in Reference 1 are not necessary because identical changes were included in Amendment 261 (References 4 and 5).

Pages 191 and 193 of Appendix A - Technical Specifications

Changes to pages 191 and 193 (Appendix A) are necessary to reflect changes approved by the NRC as part of Amendment 261, but not incorporated in Reference 1. Refer to Attachment III for the specific changes.

Table 1 summarizes these changes.

References

1. NYPA Letter, J. Knubel to the NRC, "Proposed Change to the Technical Specifications (JPTS-99-006) Laboratory Testing of Nuclear-Grade Charcoal 180 Day Response to NRC Generic Letter 99-02," (JPN-99-039), dated November 19, 1999.

2. NRC Generic Letter 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999.

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5. NRC letter, G. S. Vissing to NYPA, "Correction to Amendment No. 261 Issued on April 14, 2000 (TAC No. MA8783)," dated May 11, 2000.

Table 1 - Summary of Changes

Section	Page No.	Disposition	Justification
Technical Specifications (Appendix A)	182	Use TS page provided with JPN-99-039.	Page unaffected by TS Amendment 261.
	183	Use TS page provided with JPN-99-039.	Page unaffected by TS Amendment 261.
	183a	Use TS page provided with JPN-99-039.	Page unaffected by TS Amendment 261.
	191	Use TS page included in Attachment I of this submittal.	Page updated to reflect TS Amendment 261.
	192	Use TS page provided with JPN-99-039.	Page unaffected by TS Amendment 261.
	193	Use TS page included in Attachment I of this submittal.	Page updated to reflect TS Amendment 261.
	196	Use TS page provided with JPN-99-039.	Page unaffected by TS Amendment 261.
	238	Use TS page provided with JPN-99-039.	Page unaffected by TS Amendment 261.
	239	Use TS page provided with JPN-99-039.	Page unaffected by TS Amendment 261.
	243	Use TS page provided with JPN-99-039.	Page unaffected by TS Amendment 261.
	285	Changes not required. Do not issue additional changes to this page.	All changes proposed by JPN-99-039 incorporated in TS by Amendment 261.
	285a	Changes not required. Do not issue additional changes to this page.	All changes proposed by JPN-99-039 incorporated in TS by Amendment 261.
Radiological Effluent Tech Specifications (Appendix B)	1	Changes not required. Do not issue additional changes to this page.	All changes proposed by JPN-99-039 incorporated in TS by Amendment 261.

Attachment III to JPN-00-040

MARKUP OF UPDATED PAGE CHANGES

Includes replacement pages 191 and 193 of
FitzPatrick Technical Specifications (Appendix A to the Operating License)

New York Power Authority

JAMES A. FITZPATRICK NUCLEAR POWER PLANT
Docket No. 50-333
DPR-59

3.7 BASES (cont'd)

complete containment system, secondary containment is required at all times that primary containment is required as well as during refueling.

The Standby Gas Treatment System is designed to filter and exhaust the reactor building atmosphere to the main stack during secondary containment isolation conditions with a minimum release of radioactive materials from the reactor building to the environs. Both standby gas treatment fans are designed to automatically start upon containment isolation; however, only one fan is required to maintain the reactor building pressure at approximately a negative 1/4 in. water gage pressure; all leakage should be in-leakage. Each of the two fans has 100 percent capacity. If one Standby Gas Treatment System circuit is inoperable, the other circuit must be verified operable daily. This substantiates the availability of the operable circuit and results in no added risk; thus, reactor operation or refueling operation can continue. If neither circuit is operable, the Plant is brought to a condition where the system is not required.

While only a small amount of particulates is released from the Pressure Suppression Chamber System as a result of the loss-of-coolant accident, high-efficiency particulate filters are specified to minimize potential particulate release to the environment and to prevent clogging of the iodine filter. The high-efficiency filters have an efficiency greater than 99 percent for particulate matter larger than 0.3 micron. The minimum iodine removal efficiency is 99 percent. Filter banks will

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be replaced whenever significant changes in filter efficiency occur. Tests (11) of impregnated charcoal identical to that used in the filters indicated that shelf life up to 5 yr leads to only minor decreases in methyl iodine removal efficiency.

~~The analysis of the design basis loss-of-coolant accident assumed a charcoal filter efficiency of 90% for the SBGT system and a source term provided by GE based on NEDO-10871. The assumed 90% is sufficient to prevent exceeding 10CFR100 guidelines for accidents analyzed. The charcoal and particulate filters are tested to an acceptance criteria of 99% efficiency with 1% penetration. A heater maintains relative humidity below 70% in order to assure the efficient removal of methyl iodine on the impregnated charcoal filters. Regulatory Guide 1.52 assigns a charcoal filter efficiency of 95% for 2 inch beds (as used in the SBGT system), thus assuming 90% efficiency in dose calculations and testing to 99% efficiency provide additional conservatism in analysis and operation.~~

The operability of the Standby Gas Treatment System (SGTS) must be assured if a design basis loss of coolant accident (LOCA) occurs while the containment is being purged or vented through the SGTS. Flow from containment to the SGTS is via 6 inch Valve Number 27MOV-121. Since the maximum flow through the 6 inch line following a design basis LOCA is within the design capabilities of the SGTS, use of the 6 inch line assures the operability of the SGTS.

D. <u>Primary Containment Isolation Valves</u>

Double isolation valves are provided on lines penetrating the primary containment and open to the free space

The analysis of the design basis loss-of-coolant accident assumed a charcoal efficiency of 90% for the SBGT system and source term provided by GE based on NEDO-10871. The assumed 90% efficiency is sufficient to prevent exceeding 10 CFR 100 guidelines for the accident analyzed. A heater maintains relative humidity below 70% in order to assure the efficient removal of methyl iodine on the impregnated charcoal filters. The particulate filters are tested to acceptance criteria of 99% efficiency. Surveillance tests of the activated charcoal are based on NRC Generic Letter (GL) 99-02 guidelines. This GL requires testing in accordance with ASTM D3803-1989. Because this standard is more accurate and demanding than older tests, utilizing a safety factor as low as two for determining the acceptance criteria for charcoal efficiency is acceptable. This safety factor ensures that the charcoal filter efficiency assumed in the accident analysis is still valid at the end of the operating cycle. Based on the analysis of the design basis loss-of-coolant accident, which assumes a charcoal efficiency of 90% for the SBGT system, and a safety factor of two, the acceptance criteria for charcoal filter efficiency is 95% (5% allowable penetration). These values are determined using the following formula:

$$P_{TEST} = (100 - E_a) / F_s$$

Where:

P_{TEST} = *Maximum allowable penetration by test*
E_a = *Charcoal filter efficiency used in accident analysis*
F_s = *Safety factor*

4.7 BASES

A. Primary Containment

The water in the suppression chamber is used only for cooling in the event of an accident; i.e., it is not used for normal operation; therefore, a daily check of the temperature and volume is adequate to assure that adequate heat removal capability is present.

The primary containment preoperational test pressures are based upon the calculated primary containment pressure response corresponding to the design basis loss-of-coolant accident. The peak drywell pressure would be about 45 psig which would rapidly reduce to 27 psig within 30 sec. following the pipe break. Following the pipe break, the suppression chamber pressure rises to 26 psig within 30 sec, equalizes with drywell pressure and thereafter rapidly decays with the drywell pressure decay (14).

The design pressure of the drywell and suppression chamber is 56 psig(15). The design basis accident leakage rate is 1.5 percent/day at a pressure of 45 psig. As pointed out above, the drywell and suppression chamber pressure following an accident would equalize fairly rapidly. Based on the primary containment pressure response and the fact that the drywell and suppression chamber function as a unit, the primary containment will be tested as a unit rather than the individual components separately.

Design basis accidents were evaluated as discussed in Section 14.6 of the FSAR and the power uprate safety evaluation, Reference 18. The whole body and thyroid doses in the control room, low population zone (LPZ) and site boundary meet the requirements of 10 CFR Parts 50 and 100. The technical support center (TSC), not designed to these licensing bases, was also analyzed. The whole body and thyroid dose acceptance criteria used for the main control room are met for the TSC when initial access to the TSC and occupancy of certain areas in the TSC is restricted by administrative control. ~~The LOCA dose evaluations, References 19, 20, and 21, assumed: the primary containment leak rate was 1.5 volume percent per day; source term releases were in accordance with TID-14844 and Regulatory Guide 1.3, and were consistent with the Standard Review Plan; and the standby gas treatment system filter efficiency was 90% for halogens.~~ These doses are also based on the

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INSERT "B" - Appendix A, page 193

The LOCA dose evaluations, References 19, 20, and 21 assumed: the primary containment leak rate (including MSIV leakage) was 1.5 volume percent per day; the source term releases were in accordance with Regulatory Guide 1.3 and were consistent with the Standard Review Plan; and the standby gas treatment system filter efficiency was 90% for halogens. Thyroid doses were calculated using the dose conversion factors in ICRP-30.