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Docket No. 50-333

Mr. George T. Berry
General Manager & Chief Engineer
Power Authority of the State of
New York
10 Columbus Circle
New York, New York 10019

Dear Mr. Berry:

The Commission has issued the enclosed Amendment No. 40 to Facility Operating License No. DPR-59 for the James A. FitzPatrick Nuclear Power Plant. The amendment consists of changes to the Technical Specifications in response to your application dated February 23, 1976, July 5, 1978 (date of NRC receipt) and application dated August 1, 1978.

Your applications for amendments requested a modification as well as an addition to the existing Technical Specifications. The modification proposed use of motor operated valves instead of air operated check valves for containment isolation in the High Pressure Coolant Injection (HPCI), Reactor Core Isolation Cooling (RCIC), Low Pressure Coolant Injection (LPCI), and Core Spray Systems. The addition consisted of new surveillance requirements for the air operated isolation check valves.

The proposed modification for the HPCI and RCIC Systems have been approved without change. The proposed modification for the LPCI and Core Spray isolation valves, as requested by you, were not accepted. However, based on verbal communications, certain changes were found to be mutually acceptable. The proposed addition of surveillance requirements for air operated check valves has been accepted without change.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

/s/

Thomas A. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors

CP 1

Enclosures:
1. Amendment No. 40 to DPR-59
2. Safety Evaluation
3. Notice

7811270243

CD

cc w/enclosures:
see next page

| OFFICE➤ | ORB#3 | ORB#3 | OELD | ORB#3 | |
|---|---|---|---|---|---|
| SURNAME➤ | SSheppard | PPolk:acr | | TIppolito | |
| DATE➤ | 11/ /78 | 11/ /78 | 11/ 7 /78 | 11/ 9 /78 | |

NRC FORM 318 (9-76) NRCM 0240

★ U.S. GOVERNMENT PRINTING OFFICE: 1978 - 265 - 769

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New York, New York 10007

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

POWER AUTHORITY OF THE STATE OF NEW YORK

DOCKET NO. 50-333

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 40
License No. DPR-59

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

   A. The application for amendment by the Power Authority of the State of New York (the licensee) dated February 23, 1976 as supplemented July 5, 1978 (date of NRC receipt), and application dated August 1, 1978, comply 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 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-59 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 40, 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

Thomas A. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 9, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 40

FACILITY OPERATING LICENSE NO. DPR-59

DOCKET NO. 50-333

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

| Remove | Insert |
|---|---|
| 113 | 113 |
| 114 | 114 |
| 117 | 117 |
| - | 121a |
| 171 | 171 |
| 172 | 172 |
| - | 172a |
| 174 | 174 |
| 175 | 175 |
| 199 | 199 |
| 200 | 200 |
| 201 | 201 |
| 202 | 202 |
| 209 | 209 |
| 211 | 211 |
| 212 | 212 |
| 213 | 213 |

| | | |
|---|---|---|
| b. | Flow Rate Test - Core spray pumps shall deliver at least 4,625 gpm against a system head corresponding to a total pump developed head of ≥ 113 psig | Once/3 months |
| c. | Pump Operability | Once/month |
| d. | Motor Operated Valve | Once/month |
| e. | Core Spray Header $\Delta p$ Instrumentation | |
| | Check | Once/day |
| | Calibrate | Once/3 months |
| | Test | Once/3 months |
| f. | Logic System Functional Test | Once/each operating cycle |
| g. | Testable Check Valves | Tested for operability any time the reactor is in the cold condition exceeding 48 hours, if operability tests have not been performed during the preceding 31 days. |

3.5 (cont'd)

2. From and after the date that one of the Core Spray Systems is made or found inoperable for any reason, continued reactor operation is permissible during the succeeding 7 days unless the system is made operable earlier, provided that during the 7 days all active components of the other Core Spray System and the LPCI System and the emergency diesel generators shall be operable.

3. The LPCI mode of the RHR System shall be operable whenever irradiated fuel is in the reactor and prior to reactor startup from a cold condition, except as specified below.

   a. From the time that one of the RHR pumps is made or found to be inoperable for any reason, continued reactor operation is permissible during the succeeding 7 days unless the pump is made operable earlier provided that during such 7 days the remaining active components of the LPCI, containment spray mode, all active components of both Core Spray Systems, and the emergency diesel generators are operable.

4.5 (cont'd)

2. When it is determined that one Core Spray System is inoperable the operable Core Spray System, the LPCI System, and the emergency diesel generators shall be demonstrated to be operable immediately. The remaining Core Spray System shall be demonstrated to be operable daily thereafter.

3. LPCI System testing shall be as specified in 4.5.A.1.a, b, c, d, f and g except that three RHR pumps shall deliver at least 23,100 gpm against a system head corresponding to a reactor vessel pressure of 20 psig.

   a. When it is determined that one of the RHR pumps is inoperable, the remaining active components of the LPCI, containment spray subsystem, both Core Spray Systems, and the emergency diesel generators required for operation shall be demonstrated to be operable immediately, and the remaining RHR pumps shall be demonstrated to be operable daily thereafter.

4. Should one of the containment cooling sybsystems become inoperable, continued reactor operation is permissible for a period not to exceed 7 days, unless such subsystem is sooner made operable provided that during such 7 days all active components of the other containment cooling sybsystem, including its associated diesel generator, are operable.

5. If the requirements of 3.5.B cannot be met, the reactor shall be placed in a cold condition within 24 hr.

6. Low power physics testing and reactor operator training shall be permitted with reactor coolant temperature $\leq 212^{o}F$ with an inoperable component(s) as specified in 3.5.B above.

C. High Pressure Coolant Injection (HPCI) System

1. The HPCI System shall be operable whenever the reactor pressure is greater than 150 psig and irradiated fuel is in the reactor vessel and prior to reactor startup from a cold condition, except as specified below:

C. High Pressure Coolant Injection (HPCI) System

Surveillance of HPCI System shall be performed as follows provided a reactor steam supply is available. If steam is not available at the time the surveillance test is scheduled to be performed, the test shall be performed within ten days of continuous operation from the time steam becomes available.

1. HPCI System testing shall be as specified in 4.5.A.1.a,b, c, d, f, and g except that the HPCI pump shall deliver at least 4,250 gpm against a system head corresponding to a reactor vessel pressure of 1,110 psig to 150 psig.

E. Reactor Core Isolation Cooling (RCIC) System

1. The RCIC System shall be operable whenever there is irradiated fuel in the reactor vessel and the reactor pressure is greater than 150 psig and prior to a reactor startup from a cold condition, except from the time that the RCIC System is made or found to be inoperable for any reason, continued reactor power operation is permissible during the succeeding 7 days unless the system is made operable earlier provided that during these 7 days the HPCI System is operable.

2. If the requirements of 3.5.E cannot be met, the reactor shall be placed in the cold condition and pressure less than 150 psig within 24 hours.

3. Low power physics testing and reactor operator training shall be permitted with inoperable components as specified in 3.5.E.2 above, provided that reactor coolant temperature is $\leq 212^{o}F$.





E. Reactor Core Isolation Cooling (RCIC) System

1. RCIC System testing shall be performed as follows provided a reactor steam supply is available. If steam is not available at the time the surveillance test is scheduled to be performed, the test shall be performed within ten days of continuous operation from the time steam becomes available.

| Item | Frequency |
|---|---|
| a. Simulated Automatic Actuation Test | Once/operating cycle |
| b. Pump Operability | Once/month |
| c. Motor Operated Valve Operability | Once/month |
| d. Flow Rate | Once/3 months |
| e. Testable Check Valves | Tested for operability any time the reactor is in the cold condition exceeding 48 hours, if operability tests have not been performed during the preceding 31 days. |

The RCIC pump shall deliver at least 400 gpm for a system head corresponding to a reactor pressure of 1,120 psig to 150 psig.

2. When it is determined that the RCIC System is inoperable at a time when it is required to be operable, the HPCI System shall be demonstrated to be operable immediately and daily thereafter.

4.7 (cont'd)

c. Type C tests

(1.) Type C tests shall be performed by local pressurization. The pressure shall be applied in the same direction as that when the valve would be required to perform its safety function, except as listed in Table 3.7-1 unless it can be determined that the results from the tests for a pressure applied in a different direction will provide equivalent or more conservative results. Each valve to be tested shall be closed by normal operation and without any preliminary exercising or adjustments.

(2.) Valves, unless pressurized with fluid from a seal system, shall be pressurized with air or nitrogen at a pressure of Pa, and the gas flow to maintain Pa shall be measured.

(3.) Valves, which are sealed with fluid from a seal system, such as the liquid in the suppression chamber shall not be tested.

**(4.) See table 3.7-2 for exceptions.**

**(5.) Acceptance criterion - The combined leakage rate for all penetrations and valves subject to Type B and C tests shall be less than 0.60 La. Leakage from containment isolation valves that are sealed with fluid from a seal system may be excluded when determining the combined leakage rate provided that the installed isolation valve seal-water system fluid inventory is sufficient to assure the sealing function for at least 30 days.**

d. Other leak rate tests

(1) The leakage rate for containment isolation valves 10-AOV-68A, B (penetration X-13A,B) for Low Pressure Coolant Injection System and 14-AOV-13A,B (penetration X-16A,B) for Core Spray System shall be less than 11 cubic feet per minute per valve (pneumatically tested at 45 psig with ambient temperature) or 10 gallons per minute per valve (hydrostatically) tested at 1000 psig with ambient temperature.

e. **Periodic retest schedule.**

**(1.) Type A test.**

After the preoperational leakage rate tests, a set of three Type A tests shall be performed, at approximately equal intervals during each 10-year service period.

The third test of each set shall be conducted when the plant is shut down for the 10-year plant inservice inspections.

Permissible periods for testing. The performance of Type A tests shall be limited to periods when the plant facility is nonoperational and secured in the shutdown condition under the administrative control and in accordance with the plant safety procedures.

(2.) Type B tests.

Type B tests, (except tests for air locks), shall be performed during each reactor shutdown for refueling, or other convenient intervals, but in no case at intervals greater than 2 years. Air locks shall be tested at 6-month intervals. However, air locks which are opened and closed during such intervals shall be tested within 24 hours except when primary containment integrity is not required.

(3.) Type C test.

Type C tests shall be performed during each reactor shutdown for refueling but in no case at intervals greater than two years.

(4) Other leak rate tests specified in Section 4.7d shall be performed during each reactor shutdown for refueling but in no case at intervals greater than two years.

f. **Containment modification**

Any major modification, replacement of a component which is part of the primary reactor containment boundary, or resealing a seal-welded door, performed after the preoperational leakage rate test shall be followed by either a Type A, Type B, or Type C test, as applicable, for the area affected by the modification. The measured leakage from this test shall be included in the test report. The acceptance criteria as appropriate, shall be met. Minor modifications, replacements, or resealing on seal-welded doors, performed directly prior to the conduct of a scheduled Type A test do not require a separate test.

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TABLE 3.7-1 (Cont'd)

PROCESS PIPELINE PENETRATING PRIMARY CONTAINMENT

(Numbers in parentheses are keyed to numbers on following pages; signal codes are listed on following pages.)

| Line Isolated | Drywell Penetration | Valve Type (6) | Power to Open (5) (6) | Group | Location Ref. to Drywell | Power to Close (5) (6) | Isolation Signal | Closing Time (7) | Normal Status | Remarks and Exceptions |
|---|---|---|---|---|---|---|---|---|---|---|
| Mini-purge to recirc pump | X-31Ac X-31Bc | Check | Process | C | Outside | Process | Rev. flow | Not applicable | Open | |
| Mini-purge to recirc pump | X-31Ac X-31Bc | Check | Process | C | Inside | Process | Rev. flow | Not applicable | Open | |
| RHR reactor shutdown cooling supply | X-12 | MO Gate | Dc | A | Outside | Dc | A,U,F,RM | 38 sec | Closed | |
| RHR reactor shutdown cooling supply | X-12 | MO Gate | Ac | A | Inside | Ac | A,U,F,RM | 38 sec | Closed | |
| RHR to suppression spray header | X-21A,B | MO Globe | Ac | B | Outside | Ac | G,S,RM | 10 sec | Closed | Throttling type valve Note (2) |
| RHR - containment spray | X-39A,B | MO Gate | Ac | B | Outside | Ac | G,S,RM | 10 sec | Closed | Note (2) |
| RHR - containment spray | X-39A,B | MO Gate | Ac | B | Outside | Ac | G,S,RM | 10 sec | Closed | Note (2) |
| RHR - reactor head spray | X-17 | MO Gate | Ac | A | Inside | Ac | A,U,F,RM | 20 sec | Closed | |
| RHR - reactor head spray | X-17 | MO Gate | Dc | A | Outside | Dc | A,U,F,RM | 20 sec | Closed | |
| RHR to suppression pool | X-21OA,B | MO Globe | Ac | B | Outside | Ac | G,RM | 70 sec | Closed | Throttling type valve - Note (2) |
| RHR - LPCI to reactor | X-13A,B | MO Gate | Ac | A | Outside | Ac | RM,H | 120 sec | Closed | 3 |
| RHR - LPCI to reactor | X-13A,B | MO Globe | Ac | A | Outside | Ac | RM, H | 90 sec | Open | Throttling type valve - Note (10) 3 |
| RHR - LPCI to reactor | X-13A,B | AO Check | — | A | Inside | Process | Rev. flow | Not applicable | Closed | Testable check valve (3,16) |

TABLE 3.7-1 (Cont'd)

PROCESS PIPELINE PENETRATING PRIMARY CONTAINMENT

(Numbers in parentheses are keyed to numbers on following pages: signal codes are listed on following pages.)

| Line Isolated | Drywell Penetration | Valve Type (6) | Power to Open (5) (6) | Group | Location Ref. to Drywell | Power to Close (5) (6) | Isolation Signal | Closing Time (7) | Normal Status | Remarks and Exceptions |
|---|---|---|---|---|---|---|---|---|---|---|
| RHR pump suction from suppression pool | X-225A,B | MO Gate | Ac | B | Outside | Ac | RM | Not applicable | Open | |
| Standby liquid control | X-42 | Check | -- | A | Outside | Process | Rev. flow | Not applicable | Closed | |
| Standby liquid control | X-42 | Check | -- | A | Inside | Process | Rev. flow | Not applicable | Closed | |
| Reactor water cleanup from reactor | X-14 | MO Gate | Ac | A | Inside | Ac | A,J,RM | 30 sec | Open | |
| Reactor water cleanup from reactor | X-14 | MO Gate | Dc | A | Outside | Dc | A,V,J,RM | 30 sec | Open | |
| Reactor water from reactor warm-up | X-14 | MO Gate | Dc | A | Outside | Dc | A,V,Y,J,RM | 10 sec | Closed | |
| Reactor water cleanup return | X-9A | Check | -- | A | Outside | Process | Rev. flow | Not applicable | Open | |
| RCIC - turbine steam supply | X-10 | MO Gate | Ac | A | Inside | Ac | K,RM | 15 sec | Open) | Opens on Sig B: line break Sig K overrides to close valves |
| RCIC - turbine steam supply | X-10 | MO Gate | Dc | A | Outside | Dc | K,RM | 15 sec | Open) | |
| RCIC - turbine exhaust | X-212 | Check | Fwd. flow | B | Outside | Process | Rev. flow | -- | Closed | |
| RCIC - minimum pump flow | X-210A | MO Globe | Dc | B | Outside | Dc | K,RM | 5 sec | Closed | |
| RCIC - pump discharge | X-9A | MO Gate | Dc | B | Outside | Dc | RM | Not applicable | Closed | |

TABLE 3.7-1 (Cont'd)

PROCESS PIPELINE PENETRATING PRIMARY CONTAINMENT

(Numbers in parentheses are keyed to numbers on following pages; signal codes are listed on following pages.)

| Line Isolated | Drywell Penetration | Valve Type (6) | Power to Open (5) (6) | Group | Location Ref. to Drywell | Power to Close (5) (6) | Isolation Signal | Closing Time (7) | Normal Status | Remarks and Exceptions |
|---|---|---|---|---|---|---|---|---|---|---|
| RHR to radwaste | X-225A | MO Gate | Ac | B | Outside | Ac | A,F,RM | 24 sec | Closed | |
| RHR to radwaste | X-225A | MO Gate | Dc | B | Outside | Dc | A,F,RM | 24 sec | Closed | |
| RCIC - vacuum pump discharge | X-226 | Check | Fwd. flow | B | Outside | Process | Rev. flow | - | Closed | |
| RCIC - pump suction | X-224 | MO Gate | Dc | B | Outside | Dc | RM | Not applicable | Closed | |
| RCIC - pump suction | X-224 | MO Gate | Dc | B | Outside | Dc | RM | Not applicable | Closed | |
| Core spray - minimum pump flow | X-210A,B | MO Gate | Ac | B | Outside | Ac | RM | Not applicable | Closed | |
| Core spray to reactor | X-16A,B | MO Gate | Ac | A | Outside | Ac | RM | Not applicable | Open | |
| Core spray to reactor | X-16A,B | MO Gate | Ac | A | Outside | Ac | RM | Not applicable | Closed | |
| Core spray to reactor | X-16A,B | AO Check | (3) | A | Inside | Note (3) | Rev. flow | Not applicable | Closed | Testable check valve - Note (3,16) |
| Core spray test to suppression pool | X-210A,B | MO Globe | Ac | B | Outside | Ac | G,RM | 45 sec | Closed | |
| Core spray pump suction | X-227A,B | MO Gate | Ac | B | Outside | Ac | RM | Not applicable | Open | |
| Drywell equipment drain sump discharge | X-19 | MO Plug | Ac | B | Inside | Ac | A,F,RM | 30 sec | Open | |
| Drywell equipment drain sump discharge | X-19 | AO Plug | Air/ac | B | Outside | Spring | A,F,RM | Not applicable | Open | |

TABLE 3.7-1 (Cont'd)

PROCESS PIPELINE PENETRATING PRIMARY CONTAINMENT

(Numbers in parentheses are keyed to numbers on following pages: signal codes are listed on following pages.)

| Line Isolated | Drywell Penetration | Valve Type (6) | Power to Open (5) (6) | Group | Location Ref. to Drywell | Power to Close (5) (6) | Isolation Signal | Closing Time (7) | Normal Status | Remarks and Exceptions |
|---|---|---|---|---|---|---|---|---|---|---|
| Drywell floor drain sump discharge | X-18 | MO Plug | Ac | B | Inside | Ac | A,F,RM | 30 sec | Open | |
| Drywell floor drain sump discharge | X-18 | AO Plug | Air/Ac | B | Outside | Spring | A,F,RM | Not applicable | Open | |
| Traveling incore probe | X-35A,B,C,D | Explosive shear | Dc | A | Outside | Dc | RM | Not applicable | Open | One valve on each line |
| Traveling incore probe | X-35A,B,C,D | SO Ball | Ac | A | Outside | Ac | A,F,RM | Not applicable | Open | One valve on each line Note (14) |
| Traveling incore probe purge | X-35B | Check | Fwd. flow | A | Outside | Process | Rev. flow | Not applicable | Closed | |
| HPCI - turbine steam supply | X-11 | MO Gate | Ac | A | Inside | Ac | L,RM | 20 sec | Open | )Signal "G" opens )valve. Signal "L" )overrides and )closes valve. |
| HPCI - turbine steam supply | X-11 | MO Gate | Dc | A | Outside | Dc | L,RM | 20 sec | Closed) | |
| HPCI - turbine exhaust | X-214 | Check | Fwd. flow | B | Outside | Process | Rev. flow | Not applicable | Open | Closes on rev. flow or low exhaust pressure. |
| HPCI - turbine exhaust | X-214 | Check | Fwd. flow | B | Outside | Process | Rev. flow | Not applicable | Open | |
| HPCI Pump suction | X-226 | MO Gate | Dc | B | Outside | Dc | L,RM | 60 sec | Closed | |
| HPCI - pump discharge | X-9B | MO Gate | Dc | B | Outside | Dc | RM | Not applicable | Closed | |
| HPCI - turbine exhaust drain | X-222 | Stop Check | Fwd. flow | B | Outside | Process | Rev. flow | Not applicable | Closed | |
| HPCI - minimum pump flow | X-210B | Check | Fwd. flow | B | Outside | Process | Rev. flow | Not applicable | Closed | |

NOTES FOR TABLE 3.7-1 (CONT'D)

9. Coincident low reactor water level signal "G" and low reactor pressure signal "T" open LPCI valves, except that recirculation line break signal "H" overrides to close LPCI valves on borken side and automatically opens the LPCI valves in the opposite loop. Special interlocks permit testing these valves with manual switch during any mode of reactor operation except when coincident signals "G" and "T" are present.

10. Coincident signals "G" and "T" open valves. Special interlocks permit testing these valves by manual switch except when automatic signals are present.

11. Normal status position of valve (open or closed) is the position during normal power operation of the reactor (see "Normal Status" column).

12. The specified closure rates are as required for containment isolation only.

13. Minimum closing time is based on valve and line size.

14. Signal "A" or "F" causes automatic withdrawal of TIP probe. When probe is withdrawn, the valve automatically closes by mechanical action.

15. Reactor building ventilation exhaust high radiation signal "Z" is generated by two trip units. This required one unit at high trip or both units at down scale (instrument failure) trip, in order to initiate isolation.

16. Leak testing shall be accomplished in accordance with section 4.7.A.2.d.

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# TABLE 3.7-2

## EXCEPTION TO TYPE C TESTS

Certain Type C tests will be performed or omitted as follows:

| Penetration | System | Valve | Local Leak Rate Test Performed |
|---|---|---|---|
| X-7A, B, C, and D | Main Steam | 29-AOV-80A, B, C, and D<br>29-AOV-86A, B, C, and D | These valves are air-operated globe valves - pressurized in reverse direction and measurement of leakage will be equivalent to results from pressure applied in the same direction as when the valves would be required to perform its safety function. Therefore, pressure will be applied between the isolation valves and leakage measured. A water seal of 25 psig will be used on the inboard valve to determine the outboard valve's leak rate. (limit 11.5 scfh at 25 psig) |
| X-10 | RCIC | 13-MOV-15 | See X-25 (27-AOV-131A, B) |
| X-11 | HPCI | 23-MOV-15 | See X-25 (27-AOV-131A, B) |
| X-25 | Dry Well Inerting CAD and Purge | 27-AOV-112 | This valve is a butterfly valve - pressurization in reverse direction and measurement of leakage will be equivalent to results from pressure applied in the same direction as that when the valve would be required to perform its safety function. |
| X-25 | Dry Well Inerting CAD and Purge | 27-AOV-131A<br>27-AOV-131B | These valves will be tested in the reverse direction, since the system was not designed for pressure to be applied in the same direction as that when the valve would be required to perform its safety function.<br><br>Basis - The pressurization direction was not a requirement at the time of plant design; to redesign the system to permit this is not feasible as it would delay plant operation. |
| X-26 A/B | Dry Well Inerting CAD and Purge | 27-AOV-113<br>27-MOV-113 | See X-25 (27-AOV-112)<br>This globe valve will be tested in the reverse direction. See X-25 (27-AOV-131A, B) |

TABLE 3.7-2 (CONT'D)

| Penetration | System | Valve | Local Leak Rate Test Performed |
|---|---|---|---|
| | | 27-SOV-120B<br>27-SOV-121B<br>27-SOV-122B | See X-25 (27-AOV-131A, B) |
| X-31 Bd | Dry Well Inerting CAD and Purge | 27-SOV-125B | See X-25 (27-AOV-131A) |
| X-39A | Cont. Spray | 10-MOV-31A | This valve will be pressurized in the reverse direction and leakage measured. See X-25 (27-SOV-131A, B) |
| X-39B | Cont. Spray | 10-MOV-31A | See X-39A |
| X-45 | ILRT | VSM-100T | See X-25 (27-AOV-131A, B) |
| X-59 | Dry Well Inerting Cad and Purge | 27-SOV-123A | See X-25 (27-AOV-131A, B) |
| X-202 | Torus Vacuum Breakers | AOV-101A/B | See X-25 (27-AOV-112) |
| X-203A | Dry Well Inerting CAD and Purge | 27-SOV-119B | See X-25 (27-AOV-131A, B) |
| X-203B | Dry Well Inerting CAD and Purge | 27-SOV-124A | See X-25 (27-AOV-131A) |
| X-205 | Dry Well Inerting CAD and Purge | 27-AOV-117<br>27-MOV-117 | See X-25 (27-AOV-112)<br>See X-25 (27-MOV-113) |
| X-210 A/B | RCIC, RHR | | Will not be tested as lines are water sealed by suppression chamber water See X-25 (27-AOV-131A, B) |
| X-211A | RHR | 10-MOV-38A | This valve will be tested in the reverse direction. See X-25 (27-AOV-131A, B) |
| X-211B | RHR | 10-MOV-38B | This valve will be tested in the reverse direction. |
| X-212 | RCIC | 13-MOV-130 | See X-25 (27-AOV-131A/B) |
| X-218 | ILRT | VSM-100T | See X-25 (27-AOV-131A/B) |
| X-220 | Dry Well Inerting CAD and Purge | 27-AOV-116<br>27-SOV-132A<br>27-SOV-132B | See X-25 (27-AOV-112)<br>See X-25 (27-AOV-131A/B) |
| X-222 | HPCI | | See X-210 A/B |
| X-224 | RHR | | See X-210 A/B |
| X-225 | RHR | | See X-210 A/B |

TABLE 3.7-2 (CONT'D)

| Penetration | System | Valve | Local Leak Rate Test Performed |
|---|---|---|---|
| X-226 | HPCI | | See X-210 A/B |
| X-227 | Core Spray | | See X-210 A/B |
| X-228 | Condensate | | See X-210 A/B |

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

# SAFETY EVALUTION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

# SUPPORTING AMENDMENT NO. 40 TO FACILITY OPERATING LICENSE NO. DPR-59

# POWER AUTHORITY OF THE STATE OF NEW YORK

# JAMES A. FITZPATRICK NUCLEAR POWER PLANT

# DOCKET NO. 50-333

## Introduction

By its letters dated February 23, 1976, July 5, 1978 and August 1, 1978, the Power Authority of the State of New York and the Niagara Mohawk Power Corporation proposed changes to the Technical Specifications for the FitzPatrick Nuclear Power Plant. These changes involve the use of motor operated valves instead of check valves for containment isolation in the High Pressure Coolant Injection (HPCI), Reactor Core Isolation Cooling (RCIC), Low Pressure Coolant Injection (LPCI) and Core Spray Systems.

In the HPCI and RCIC systems, containment isolation is presently accomplished by the use of one check valve inside the containment and one check valve outside the containment. There is also a motor operated valve outside containment upstream of the check valve and within ten feet of the containment penetration. This change in the Technical Specifications would delete the containment leak rate testing requirements for the check valve outside of containment and would impose those same leak rate requirements previously assigned to the latter check valve on the motor operated valve outside of containment. This change would also establish the frequency for testing the check valve inside containment.

In the LPCI and Core Spray systems, containment isolation is presently accomplished by the use of one check valve inside the containment and two motor operated valves outside of the containment. This change in the Technical Specifications would permit an increase in the leakage allowed through the check valve inside containment. It would also establish a new leak rate requirement and a testing frequency for the check valve inside containment. The allowable containment leakage rate would not be changed.

The licensee has indicated that this change in Technical Specifications will result in a significant reduction in radiation exposure to plant personnel. The check valve now used for containment isolation requires frequent repair and testing in order to meet the containment leakage requirements. The motor operated valves require less repair, are more accessible, and involve lower radiation levels. Therefore, by using the motor operated valves, less manpower and radiation exposure would be required to achieve the leaktightness necessary for a successful containment leak rate test.

Evaluation

General Design Criterion (GDC) 55 requires that systems which are part of the reactor coolant pressure boundary and penetrate the primary containment shall be provided with one automatic or locked closed isolation valve inside containment and one automatic or locked closed isolation valve outside containment. Check valves may be used as the automatic isolation valve inside containment, but shall not be used as the automatic isolation valve outside containment. These provisions apply, unless it can be demonstrated that the containment isolation provisions for a specific class of lines are acceptable on some other defined basis. Containment isolation valves are required on lines which communicate directly with the primary system in order to restrict the consequences of a postulated loss-of-coolant accident (LOCA) and to prevent the uncontrolled release of the primary system coolant to the environment in the event of a rupture in the system piping outside containment.

In the HPCI and RCIC systems, a motor operated valve outside containment will replace the check valve outside of containment for the purpose of containment isolation. There will be no change regarding the check valve inside containment. This is an improvement in the containment isolation system since the new system will conform to GDC 55 and the normally closed motor operated valve will more easily and reliably meet the present containment leakage requirements. This change will not affect the reliability of operation of the HPCI or RCIC system.

In the event of a pipe rupture in the HPIC or RCIC system outside containment, isolation would be provided by the check valve inside containment. In addition, the functional testing of the check valve outside containment will be continued. This valve will provide additional protection against gross leakage. Pipe rupture is detected by pump discharge header flow and pressure indication in the main control room. The operator will also be alerted to any significant leaks in the piping system outside the containment by a control room alarm indicating high level in the floor drain

sump. There are twenty-two radiation monitors installed in the Reactor Building (four process monitors and eighteen area radiation monitors). These radiation monitors would transmit audible and visual alarms to the Control Room, should radiation level near the radiation detector exceed the preset values of the monitors. The operator will manually close the motor operated valve if it is determined that the line is ruptured in the HPCI or RCIC system.

We have concluded that the modified containment isolation system will operate satisfactorily under accident conditions and that the operation of the HPCI and RCIC systems will not be affected by this change.

For each of the redundant pipe lines penetrating containment for the LPCI and Core Spray systems, there is one check valve inside containment in series with two motor operated valves outside containment. One of the motor operated valves outside containment will be normally closed. This change in technical specifications will require the use of all three valves for the purpose of containment isolation and for complying with GDC 55. The operation of the LPCI and Core Spray systems will not be affected.

The two motor operated valves outside containment will each meet all present requirements with regard to containment leak rate and testing of these valves. The check valve inside containment will be allowed a higher leak rate based on the small radiation dose that would result if the reactor coolant were released to the reactor building at the specified rate. Ten gallons per minute (gpm) leakage of reactor coolant containing radioisotopes at the maximum allowable concentration, as specified in technical specification 3.6.C.1 was determined to be an acceptable leak rate.

The licensee will test the check valve inside containment with the same frequency and in a manner similar to that used for other isolation valves. We have determined that the maximum leak rate of 10 gpm of reactor coolant at operating pressure may be verified by a test which shows no more leakage than ten standard cubic feet per minute of air with a differential pressure of 45 pounds per square inch across the valve. This test requirement will be made part of the technical specifications. Testing to meet this less stringent requirement will result in a substantial reduction in repair time and radiation exposure to plant personnel.

In the event of a pipe rupture outside of containment gross leakage would be prevented by the check valve inside containment. The operator would be alerted to any significant leaks in the piping outside the containment by a control room alarm indicating high level in the floor drain sump and by the KEEP FULL SYSTEM low level alarm in the Control Room. Pipe rupture is also detected by pressure and flow instruments which provide remote indications in the control room.

In addition, there are twenty-two radiation monitors installed in the Reactor Building (four process monitors and eighteen area radiation monitors). These radiation monitors would transmit audible and visual alarms to the Control Room, should radiation level near the radiation detector exceed the preset values of the monitors. The operator will take action to close the motor operated valves outside containment when required.

## Environmental Considerations

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR Section 51.5(d)(4), that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

## Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: November 9, 1978

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-333

POWER AUTHORITY OF THE STATE OF NEW YORK

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 40 to Facility Operating License No. DPR-59, issued to Power Authority of the State of New York (the licensee), which revised Technical Specifications for operation of the James A. FitzPatrick Nuclear Power Plant (the facility) located in Oswego County, New York. The amendment is effective as of its date of issuance.

This amendment revises the Technical Specifications relating to the leak rate testing requirements for systems which penetrate the containment boundary and are connected to the reactor coolant pressure boundary.

The applications for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR Section 51.5(d)(4) an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the application for amendment submitted by letter dated February 23, 1976, as supplemented July 5, 1978 (date of NRC receipt) and application dated August 1, 1978, (2) Amendment No. 40 to License No. DPR-59, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the Oswego County Office Building, 46 East Bridge Street, Oswego, New York. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland this 9th day of November 1978.

FOR THE NUCLEAR REGULATORY COMMISSION

Thomas A. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors