

August 15, 1995

Mr. D. L. Farrar
Manager, Nuclear Regulatory Services
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: ISSUANCE OF AMENDMENTS (TAC NOS. M91375 AND M91376)

Dear Mr. Farrar:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 105 to Facility Operating License No. NPF-11 and Amendment No. 91 to Facility Operating License No. NPF-18 for the LaSalle County Station, Units 1 and 2, respectively. The amendments are in response to your application dated January 13, 1995.

The amendments revise the pressure alarm setpoint allowable values for the Emergency Core Cooling System (ECCS) and Reactor Core Isolation Cooling (RCIC) system "keep filled" pressure instrumentation channels.

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

Sincerely,

Original signed by:

William D. Reckley, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket Nos. 50-373 and 50-374

- Enclosures: 1. Amendment No. 105 to NPF-11
- 2. Amendment No. 91 to NPF-18
- 3. Safety Evaluation

cc w/encl: see next page

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* SEE SHOLLY FOR PREVIOUS CONCURRENCE.

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D. L. Farrar
Commonwealth Edison Company

LaSalle County Station
Unit Nos. 1 and 2

cc:

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-373

LASALLE COUNTY STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 105
License No. NPF-11

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment filed by the Commonwealth Edison Company (the licensee) dated January 13, 1995, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's 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 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 set forth in 10 CFR Chapter I;
 - 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 enclosure to this license amendment and paragraph 2.C.(2) of the Facility Operating License No. NPF-11 is hereby amended to read as follows:

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(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 105 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This amendment is effective upon date of issuance and shall be implemented within 90 days.

FOR THE NUCLEAR REGULATORY COMMISSION



William D. Reckley, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 15, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 105

FACILITY OPERATING LICENSE NO. NPF-11

DOCKET NO. 50-373

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain a vertical line indicating the area of change. Pages indicated with an asterisk are provided for convenience only.

<u>REMOVE</u>	<u>INSERT</u>
3/4 5-4	3/4 5-4
3/4 5-5	3/4 5-5
3/4 7-7	3/4 7-7
3/4 7-8	3/4 7-8
B 3/4 5-1	B 3/4 5-1
B 3/4 5-2	B 3/4 5-2
--	B 3/4 5-3
B 3/4 7-1	B 3/4 7-1
*B 3/4 7-2	*B 3/4 7-2

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS

4.5.1 ECCS divisions 1, 2, and 3 shall be demonstrated OPERABLE by:

- a. At least once per 31 days for the LPCS, LPCI, and HPCS systems:
 1. Verifying by venting at the high point vents that the system piping from the pump discharge valve to the system isolation valve is filled with water.
 2. Performance of a CHANNEL FUNCTIONAL TEST of the:
 - a) Discharge line "keep filled" pressure alarm instrumentation, and
 - b) Header delta P instrumentation.
 3. Verifying that each valve, manual, power operated, or automatic, in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.
 4. Verifying that each ECCS corner room watertight door is closed, except during entry to and exit from the room.
- b. Verifying that, when tested pursuant to Specification 4.0.5, each:
 1. LPCS pump develops a flow of at least 6350 gpm against a test line pressure greater than or equal to 290 psig.
 2. LPCI pump develops a flow of at least 7200 gpm against a test line pressure greater than or equal to 130 psig.
 3. HPCS pump develops a flow of at least 6200 gpm against a test line pressure greater than or equal to 370 psig.
- c. For the LPCS, LPCI and HPCS systems, at least once per 18 months:
 1. Performing a system functional test which includes simulated automatic actuation of the system throughout its emergency operating sequence and verifying that each automatic valve in the flow path actuates to its correct position. Actual injection of coolant into the reactor vessel may be excluded from this test.
 2. Performing a CHANNEL CALIBRATION of the:
 - a) Discharge line "keep filled" pressure alarm instrumentation and verifying the:
 - 1) High pressure setpoint allowable value and the low pressure setpoint allowable value of the:

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- (a) LPCS system to be ≤ 500 psig and ≥ 45.5 psig, respectively.
 - (b) LPCI subsystem "A" to be ≤ 400 psig and ≥ 41.0 psig, respectively.
 - (c) LPCI subsystem "B" to be ≤ 400 psig and ≥ 38.5 psig, respectively.
 - (d) LPCI subsystem "C" to be ≤ 400 psig and ≥ 45.0 psig, respectively.
- 2) Low pressure setpoint allowable value of the HPCS system to be ≥ 42.5 psig.
- b) Header delta P instrumentation and verifying the setpoint allowable value of the:
 - 1) LPCS system and LPCI subsystems to be ± 1 psid.
 - 2) HPCS system to be 5 ± 2.0 psid greater than the normal indicated ΔP .
3. Deleted.
 4. Visually inspecting the ECCS corner room watertight door seals and room penetration seals and verifying no abnormal degradation, damage, or obstructions.
- d. For the ADS by:
 1. At least once per 31 days, performing a CHANNEL FUNCTIONAL TEST of the accumulator backup compressed gas system low pressure alarm system.
 2. At least once per 18 months:
 - a) Performing a system functional test which includes simulated automatic actuation of the system throughout its emergency operating sequence, but excluding actual valve actuation.
 - b) Manually opening each ADS valve and observing the expected change in the indicated valve position.
 - c) Performing a CHANNEL CALIBRATION of the accumulator backup compressed gas system low pressure alarm system and verifying an alarm setpoint of $500 + 40, - 0$ psig on decreasing pressure.

PLANT SYSTEMS

3/4.7.3 REACTOR CORE ISOLATION COOLING SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.3 The reactor core isolation cooling (RCIC) system shall be OPERABLE with an OPERABLE flow path capable of taking suction from the suppression pool and transferring the water to the reactor pressure vessel.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3 with reactor steam dome pressure greater than 150 psig.

ACTION:

- a. With a RCIC discharge line "keep filled" pressure alarm instrumentation channel inoperable, perform Surveillance Requirement 4.7.3.a.1 at least once per 24 hours.
- b. With the RCIC system inoperable, operation may continue provided the HPCS system is OPERABLE; restore the RCIC system to OPERABLE status within 14 days or be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to less than or equal to 150 psig within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.7.3 The RCIC system shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
 1. Verifying by venting at the high point vents that the system piping from the pump discharge valve to the system isolation valve is filled with water,
 2. Performance of a CHANNEL FUNCTIONAL TEST of the discharge line "keep filled" pressure alarm instrumentation, and
 3. Verifying that each valve, manual, power operated or automatic in the flow path that is not locked, sealed or otherwise secured in position, is in its correct position.
 4. Verifying that the pump flow controller is in the correct position.
- b. At least once per 92 days by verifying that the RCIC pump develops a flow of greater than or equal to 600 gpm in the test flow path with a system head corresponding to reactor vessel operating pressure when steam is being supplied to the turbine at 1000 + 20, - 80 psig.

*The provisions of Specification 4.0.4 are not applicable provided the surveillance is performed within 12 hours after reactor steam pressure is adequate to perform the tests.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

- c. At least once per 18 months by:
1. Performing a system functional test which includes simulated automatic actuation and verifying that each automatic valve in the flow path actuates to its correct position, but may exclude actual injection of coolant into the reactor vessel.
 2. Verifying that the system is capable of providing a flow of greater than or equal to 600 gpm to the reactor vessel when steam is supplied to the turbine at a pressure of 150 ± 15 psig using the test flow path.
 3. Performing a CHANNEL CALIBRATION of the discharge line "keep filled" pressure alarm instrumentation and verifying the low pressure setpoint allowable value to be ≥ 29 psig.
- d. By demonstrating MCC-121y and the 250-volt battery and charger OPERABLE:
1. At least once per 7 days by verifying that:
 - a) MCC-121y is energized, and has correct breaker alignment, indicated power availability from the charger and battery, and voltage on the panel with an overall voltage of greater than or equal to 250 volts.
 - b) The electrolyte level of each pilot cell is above the plates,
 - c) The pilot cell specific gravity, corrected to 77°F, is greater than or equal to 1.200, and
 - d) The overall battery voltage is greater than or equal to 250 volts.
 2. At least once per 92 days by verifying that:
 - a) The voltage of each connected battery is greater than or equal to 250 volts under float charge and has not decreased more than 12 volts from the value observed during the original test,
 - b) The specific gravity, corrected to 77°F, of each connected cell is greater than or equal to 1.195 and has not decreased more than 0.05 from the value observed during the previous test, and
 - c) The electrolyte level of each connected cell is above the plates.
 3. At least once per 18 months by verifying that:
 - a) The battery shows no visual indication of physical damage or abnormal deterioration, and
 - b) Battery terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material.

*The provisions of Specification 4.0.4 are not applicably provided the surveillance is performed within 12 hours after reactor steam pressure is adequate to perform the tests.

3/4.5 EMERGENCY CORE COOLING SYSTEM

BASES

3/4.5.1 and 3/4.5.2 ECCS - OPERATING and SHUTDOWN

ECCS Division 1 consists of the low pressure core spray system, low pressure coolant injection subsystem "A" of the RHR system, and the automatic depressurization system (ADS) as actuated by ADS trip system "A". ECCS Division 2 consists of low pressure coolant injection subsystems "B" and "C" of the RHR system and the automatic depressurization system as actuated by ADS trip system "B".

The low pressure core spray (LPCS) system is provided to assure that the core is adequately cooled following a loss-of-coolant accident and provides adequate core cooling capacity for all break sizes up to and including the double-ended reactor recirculation line break, and for transients or smaller breaks following depressurization by the ADS.

The LPCS is a primary source of emergency core cooling after the reactor vessel is depressurized and a source for flooding of the core in case of accidental draining.

The surveillance requirements provide adequate assurance that the LPCS system will be OPERABLE when required. Although all active components are testable and full flow can be demonstrated by recirculation through a test loop during reactor operation, a complete functional test requires reactor shutdown. The pump discharge piping is maintained full to prevent water hammer damage to piping and to start cooling at the earliest moment. The low pressure setpoint allowable value for the discharge line "keep-filled" alarm is based on the head of water between the centerline of the pump discharge and the system high point vent.

The low pressure coolant injection (LPCI) mode of the RHR system is provided to assure that the core is adequately cooled following a loss-of-coolant accident. Three subsystems, each with one pump, provide adequate core flooding for all break sizes up to and including the double-ended reactor recirculation line break, and for transients or small breaks following depressurization by the ADS.

The surveillance requirements provide adequate assurance that the LPCI system will be OPERABLE when required. Although all active components are testable and full flow can be demonstrated by recirculation through a test loop during reactor operation, a complete functional test requires reactor shutdown. The pump discharge piping is maintained full to prevent water hammer damage to piping and to start cooling at the earliest moment. The low pressure setpoint allowable value for the discharge line "keep-filled" alarm is based on the head of water between the centerline of the associated pump discharge and the system high point vent.

EMERGENCY CORE COOLING SYSTEMS

BASES

3/4.5.1 and 3/4.5.2 ECCS - OPERATING and SHUTDOWN (Continued)

ECCS Division 3 consists of the high pressure core spray system. The high pressure core spray (HPCS) system is provided to assure that the reactor core is adequately cooled to limit fuel clad temperature in the event of a small break in the reactor coolant system and loss of coolant which does not result in rapid depressurization of the reactor vessel. The HPCS system permits the reactor to be shut down while maintaining sufficient reactor vessel water level inventory until the vessel is depressurized. The HPCS system operates over a range of 1160 psid, differential pressure between reactor vessel and HPCS suction source, to 0 psid.

The capacity of the HPCS system is selected to provide the required core cooling. The HPCS pump is designed to deliver greater than or equal to 516/1550/6200 gpm at differential pressures of 1160/1130/200 psid. Water is taken from the suppression pool and injected into the reactor.

With the HPCS system inoperable, adequate core cooling is assured by the OPERABILITY of the redundant and diversified automatic depressurization system and both the LPCS and LPCI systems. In addition, the reactor core isolation cooling (RCIC) system, a system for which no credit is taken in the hazards analysis, will automatically provide makeup at reactor operating pressures on a reactor low water level condition. The HPCS out-of-service period of 14 days is based on the demonstrated OPERABILITY of redundant and diversified low pressure core cooling systems.

The surveillance requirements provide adequate assurance that the HPCS system will be OPERABLE when required. Although all active components are testable and full flow can be demonstrated by recirculation through a test loop during reactor operation, a complete functional test with reactor vessel injection requires reactor shutdown. The pump discharge piping is maintained full to prevent water hammer damage and to provide cooling at the earliest moment. The low pressure setpoint allowable value for the discharge line "keep-filled" alarm is based on the head of water between the centerline of the pump discharge and the system high point vent.

Upon failure of the HPCS system to function properly, if required, the automatic depressurization system (ADS) automatically causes selected safety-relief valves to open, depressurizing the reactor so that flow from the low pressure core cooling systems can enter the core in time to limit fuel cladding temperature to less than 2200°F. ADS is conservatively required to be OPERABLE whenever reactor vessel pressure exceeds 122 psig even though low pressure core cooling systems provide adequate core cooling up to 350 psig.

EMERGENCY CORE COOLING SYSTEMS

BASES

3/4.5.1 and 3/4.5.2 ECCS - OPERATING and SHUTDOWN (Continued)

ADS automatically controls seven selected safety-relief valves. Six valves are required to be OPERABLE since the LOCA analysis assumes 6 ADS valves in addition to a single failure. It is therefore appropriate to permit one of the required valves to be out-of-service for up to 14 days without materially reducing system reliability.

3/4.5.3 SUPPRESSION CHAMBER

The suppression chamber is also required to be OPERABLE as part of the ECCS to ensure that a sufficient supply of water is available to the HPCS, LPCS and LPCI systems in the event of a LOCA. This limit on suppression chamber minimum water volume ensures that sufficient water is available to permit recirculation cooling flow to the core (See Figure B 3/4.6.2-1). The OPERABILITY of the suppression chamber in OPERATIONAL CONDITIONS 1, 2 or 3 is required by Specification 3.6.2.1.

Repair work might require making the suppression chamber inoperable. This specification will permit those repairs to be made and at the same time give assurance that the irradiated fuel has an adequate cooling water supply when the suppression chamber must be made inoperable in OPERATIONAL CONDITION 4 or 5.

In OPERATIONAL CONDITION 4 and 5 the suppression chamber minimum required water volume is reduced because the reactor coolant is maintained at or below 200°F. Since pressure suppression is not required below 212°F, the minimum water volume is based on NPSH, recirculation volume, vortex prevention plus a 2'-4" safety margin for conservatism.

3/4.7 PLANT SYSTEMS

BASES

3/4.7.1 CORE STANDBY COOLING SYSTEM - EQUIPMENT COOLING WATER SYSTEMS

The OPERABILITY of the core standby cooling system - equipment cooling water systems and the ultimate heat sink ensure that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of these systems, assuming a single failure, is consistent with the assumptions used in the accident conditions within acceptable limits.

3/4.7.2 CONTROL ROOM AND AUXILIARY ELECTRIC EQUIPMENT ROOM EMERGENCY FILTRATION SYSTEM

The OPERABILITY of the control room and auxiliary electric equipment room emergency filtration system ensures that the rooms will remain habitable for operations personnel during and following all design basis accident conditions. The OPERABILITY of this system in conjunction with room design provisions is based on limiting the radiation exposure to personnel occupying the rooms to 5 rem or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criteria 19 of Appendix "A", 10 CFR Part 50. Cumulative operation of the system with the heaters OPERABLE for 10 hours over a 31 day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters.

3/4.7.3 REACTOR CORE ISOLATION COOLING SYSTEM

The reactor core isolation cooling (RCIC) system is provided to assure adequate core cooling in the event of reactor isolation from its primary heat sink and the loss of feedwater flow to the reactor vessel without requiring actuation of any of the Emergency Core Cooling System equipment. The RCIC system is conservatively required to be OPERABLE whenever reactor pressure exceeds 150 psig even though the LPCI mode of the the residual heat removal (RHR) system provides adequate core cooling up to 350 psig.

The RCIC system specifications are applicable during OPERATIONAL CONDITIONS 1, 2 and 3 when reactor vessel pressure exceeds 150 psig because RCIC is the primary non-ECCS source of core cooling when the reactor is pressurized.

With the RCIC system inoperable, adequate core cooling is assured by the OPERABILITY of the HPCS system and justifies the specified 14 day out-of-service period.

The surveillance requirements provide adequate assurance that RCICS will be OPERABLE when required. Although all active components are testable and full flow can be demonstrated by recirculation during reactor operation, a complete functional test requires reactor shutdown. Initial startup test program data may be used to determine equivalent turbine/pump capabilities between test flow path and the vessel injection flow path. The pump discharge piping is maintained full to prevent water hammer damage and to start cooling at the earliest possible moment. The low pressure setpoint allowable value for the discharge line "keep-filled" alarm is based on the head of water between the centerline of the pump discharge and the system high point vent.

PLANT SYSTEMS

BASES

3/4.7.4 SEALED SOURCE CONTAMINATION

The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(c) limits for plutonium. This limitation will ensure that leakage from byproduct, source, and special nuclear material sources will not exceed allowable intake values. Sealed sources are classified into three groups according to their use, with surveillance requirements commensurate with the probability of damage to a source in that group. Those sources which are frequently handled are required to be tested more often than those which are not. Sealed sources which are continuously enclosed within a shielded mechanism, i.e., sealed sources within radiation monitoring or boron measuring devices, are considered to be stored and need not be tested unless they are removed from the shielded mechanism.

3/4.7.5 FIRE SUPPRESSION SYSTEMS

The OPERABILITY of the fire suppression systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The fire suppression system consists of the water system, deluge and/or sprinklers, CO₂ systems, and fire hose stations. The collective capability of the fire suppression systems is adequate to minimize potential damage to safety related equipment and is a major element in the facility fire protection program.

In the event that portions of the fire suppression systems are inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is restored to service. When the inoperable fire fighting equipment is intended for use as a backup means of fire suppression, a longer period of time is allowed to provide an alternate means of fire fighting than if the inoperable equipment is the primary means of fire suppression.

The surveillance requirements provide assurance that the minimum OPERABILITY requirements of the fire suppression systems are met.

In the event the fire suppression water system becomes inoperable, immediate corrective measures must be taken since this system provides the major fire suppression capability of the plant. The requirement for a twenty-four hour report to the Commission provides for prompt evaluation of the acceptability of the corrective measures to provide adequate fire suppression capability for the continued protection of the nuclear plant.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-374

LASALLE COUNTY STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 91
License No. NPF-18

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment filed by the Commonwealth Edison Company (the licensee) dated January 13, 1995, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's 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 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 set forth in 10 CFR Chapter I;
 - 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 enclosure to this license amendment and paragraph 2.C.(2) of the Facility Operating License No. NPF-18 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 91 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This amendment is effective upon date of issuance and shall be implemented within 90 days.

FOR THE NUCLEAR REGULATORY COMMISSION



William D. Reckley, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 15, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 91

FACILITY OPERATING LICENSE NO. NPF-18

DOCKET NO. 50-374

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain a vertical line indicating the area of change. Pages indicated with an asterisk are provided for convenience only.

<u>REMOVE</u>	<u>INSERT</u>
3/4 5-5	3/4 5-5
3/4 7-7	3/4 7-7
3/4 7-8	3/4 7-8
B 3/4 5-1	B 3/4 5-1
B 3/4 5-2	B 3/4 5-2
--	B 3/4 5-3
B 3/4 7-1	B 3/4 7-1
*B 3/4 7-2	*B 3/4 7-2

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. Performing a CHANNEL CALIBRATION of the:
 - a) Discharge line "keep filled" pressure alarm instrumentation and verifying the:
 - 1) High pressure setpoint allowable value and the low pressure setpoint allowable value of the:
 - (a) LPCS system to be ≤ 500 psig and ≥ 45.5 psig, respectively.
 - (b) LPCI subsystem "A" to be ≤ 400 psig and ≥ 41.0 psig, respectively.
 - (c) LPCI subsystem "B" to be ≤ 400 psig and ≥ 38.5 psig, respectively.
 - (d) LPCI subsystem "C" to be ≤ 400 psig and ≥ 45.0 psig, respectively.
 - 2) Low pressure setpoint allowable value of the HPCS system to be ≥ 42.5 psig.
 - b) Header delta P instrumentation and verifying the setpoint allowable value of the:
 - 1) LPCS system and LPCI subsystems to be ± 1 psid.
 - 2) HPCS system to be 5 ± 2.0 psid greater than the normal indicated ΔP .
 3. Deleted
 4. Visually inspecting the ECCS corner room watertight door seals and room penetration seals and verifying no abnormal degradation, damage, or obstructions.
- d. For the ADS by:
1. At least once per 31 days, performing a CHANNEL FUNCTIONAL TEST of the accumulator backup compressed gas system low pressure alarm system.
 2. At least once per 18 months:
 - a) Performing a system functional test which includes simulated automatic actuation of the system throughout its emergency operating sequence, but excluding actual valve actuation.
 - b) Manually opening each ADS valve and observing the expected change in the indicated valve position.
 - c) Performing a CHANNEL CALIBRATION of the accumulator backup compressed gas system low pressure alarm system and verifying an alarm setpoint of $500 + 40, - 0$ psig on decreasing pressure.

PLANT SYSTEMS

3/4.7.3 REACTOR CORE ISOLATION COOLING SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.3 The reactor core isolation cooling (RCIC) system shall be OPERABLE with an OPERABLE flow path capable of taking suction from the suppression pool and transferring the water to the reactor pressure vessel.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3 with reactor steam dome pressure greater than 150 psig.

ACTION:

- a. With a RCIC discharge line "keep filled" pressure alarm instrumentation channel inoperable, perform Surveillance Requirement 4.7.3.a.1 at least once per 24 hours.
- b. With the RCIC system inoperable, operation may continue provided the HPCS system is OPERABLE; restore the RCIC system to OPERABLE status within 14 days or be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to less than or equal to 150 psig within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.7.3 The RCIC system shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
 1. Verifying by venting at the high point vents that the system piping from the pump discharge valve to the system isolation valve is filled with water,
 2. Performance of a CHANNEL FUNCTIONAL TEST of the discharge line "keep filled" pressure alarm instrumentation, and
 3. Verifying that each valve, manual, power operated or automatic in the flow path that is not locked, sealed or otherwise secured in position, is in its correct position.
 4. Verifying that the pump flow controller is in the correct position.
- b. At least once per 92 days by verifying that the RCIC pump develops a flow of greater than or equal to 600 gpm in the test flow path with a system head corresponding to reactor vessel operating pressure when steam is being supplied to the turbine at 1000 ± 20 , - 80 psig.

*The provisions of Specification 4.0.4 are not applicable provided the surveillance is performed within 12 hours after reactor steam pressure is adequate to perform the tests.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

- c. At least once per 18 months by:
1. Performing a system functional test which includes simulated automatic actuation and verifying that each automatic valve in the flow path actuates to its correct position, but may exclude actual injection of coolant into the reactor vessel.
 2. Verifying that the system is capable of providing a flow of greater than or equal to 600 gpm to the reactor vessel when steam is supplied to the turbine at a pressure of 150 ± 15 psig using the test flow path.
 3. Performing a CHANNEL CALIBRATION of the discharge line "keep filled" pressure alarm instrumentation and verifying the low pressure setpoint allowable value to be ≥ 29.0 psig.
- d. By demonstrating MCC-221y and the 250-volt battery and charger OPERABLE:
1. At least once per 7 days by verifying that:
 - a) MCC-221y is energized, and has correct breaker alignment, indicated power availability from the charger and battery, and voltage on the panel with an overall voltage of greater than or equal to 250 volts.
 - b) The electrolyte level of each pilot cell is above the plates.
 - c) The pilot cell specific gravity, corrected to 77°F, is greater than or equal to 1.200, and
 - d) The overall battery voltage is greater than or equal to 250 volts.
 2. At least once per 92 days by verifying that:
 - a) The voltage of each connected battery is greater than or equal to 250 volts under float charge and has not decreased more than 12 volts from the value observed during the original test,
 - b) The specific gravity, corrected to 77°F, of each connected cell is greater than or equal to 1.195 and has not decreased more than 0.05 from the value observed during the previous test, and
 - c) The electrolyte level of each connected cell is above the plates.
 3. At least once per 18 months by verifying that:
 - a) The battery shows no visual indication of physical damage or abnormal deterioration, and
 - b) Battery terminal connections are clean, tight, free of corrosion and coated with anticorrosion material.

*The provisions of Specification 4.0.4 are not applicably provided the surveillance is performed within 12 hours after reactor steam pressure is adequate to perform the tests.

3/4.5 EMERGENCY CORE COOLING SYSTEM

BASES

3/4.5.1 and 3/4.5.2 ECCS - OPERATING and SHUTDOWN

ECCS Division 1 consists of the low pressure core spray system, low pressure coolant injection subsystem "A" of the RHR system, and the automatic depressurization system (ADS) as actuated by ADS trip system "A". ECCS Division 2 consists of low pressure coolant injection subsystems "B" and "C" of the RHR system and the automatic depressurization system as actuated by ADS trip system "B".

The low pressure core spray (LPCS) system is provided to assure that the core is adequately cooled following a loss-of-coolant accident and provides adequate core cooling capacity for all break sizes up to and including the double-ended reactor recirculation line break, and for transients or smaller breaks following depressurization by the ADS.

The LPCS is a primary source of emergency core cooling after the reactor vessel is depressurized and a source for flooding of the core in case of accidental draining.

The surveillance requirements provide adequate assurance that the LPCS system will be OPERABLE when required. Although all active components are testable and full flow can be demonstrated by recirculation through a test loop during reactor operation, a complete functional test requires reactor shutdown. The pump discharge piping is maintained full to prevent water hammer damage to piping and to start cooling at the earliest moment. The low pressure setpoint allowable value for the discharge line "keep-filled" alarm is based on the head of water between the centerline of the pump discharge and the system high point vent.

The low pressure coolant injection (LPCI) mode of the RHR system is provided to assure that the core is adequately cooled following a loss-of-coolant accident. Three subsystems, each with one pump, provide adequate core flooding for all break sizes up to and including the double-ended reactor recirculation line break, and for transients or small breaks following depressurization by the ADS.

The surveillance requirements provide adequate assurance that the LPCI system will be OPERABLE when required. Although all active components are testable and full flow can be demonstrated by recirculation through a test loop during reactor operation, a complete functional test requires reactor shutdown. The pump discharge piping is maintained full to prevent water hammer damage to piping and to start cooling at the earliest moment. The low pressure setpoint allowable value for the discharge line "keep-filled" alarm is based on the head of water between the centerline of the associated pump discharge and the system high point vent.

EMERGENCY CORE COOLING SYSTEMS

BASES

3/4.5.1 and 3/4.5.2 ECCS - OPERATING and SHUTDOWN (Continued)

ECCS Division 3 consists of the high pressure core spray system. The high pressure core spray (HPCS) system is provided to assure that the reactor core is adequately cooled to limit fuel clad temperature in the event of a small break in the reactor coolant system and loss of coolant which does not result in rapid depressurization of the reactor vessel. The HPCS system permits the reactor to be shut down while maintaining sufficient reactor vessel water level inventory until the vessel is depressurized. The HPCS system operates over a range of 1160 psid, differential pressure between reactor vessel and HPCS suction source, to 0 psid.

The capacity of the HPCS system is selected to provide the required core cooling. The HPCS pump is designed to deliver greater than or equal to 516/1550/6200 gpm at differential pressures of 1160/1130/200 psid. Water is taken from the suppression pool and injected into the reactor.

With the HPCS system inoperable, adequate core cooling is assured by the OPERABILITY of the redundant and diversified automatic depressurization system and both the LPCS and LPCI systems. In addition, the reactor core isolation cooling (RCIC) system, a system for which no credit is taken in the hazards analysis, will automatically provide makeup at reactor operating pressures on a reactor low water level condition. The HPCS out-of-service period of 14 days is based on the demonstrated OPERABILITY of redundant and diversified low pressure core cooling systems.

The surveillance requirements provide adequate assurance that the HPCS system will be OPERABLE when required. Although all active components are testable and full flow can be demonstrated by recirculation through a test loop during reactor operation, a complete functional test with reactor vessel injection requires reactor shutdown. The pump discharge piping is maintained full to prevent water hammer damage and to provide cooling at the earliest moment. The low pressure setpoint allowable value for the discharge line "keep-filled" alarm is based on the head of water between the centerline of the pump discharge and the system high point vent.

Upon failure of the HPCS system to function properly, if required, the automatic depressurization system (ADS) automatically causes selected safety-relief valves to open, depressurizing the reactor so that flow from the low pressure core cooling systems can enter the core in time to limit fuel cladding temperature to less than 2200°F. ADS is conservatively required to be OPERABLE whenever reactor vessel pressure exceeds 122 psig even though low pressure core cooling systems provide adequate core cooling up to 350 psig.

EMERGENCY CORE COOLING SYSTEMS

BASES

3/4.5.1 and 3/4.5.2 ECCS - OPERATING and SHUTDOWN (Continued)

ADS automatically controls seven selected safety-relief valves. Six valves are required to be OPERABLE since the LOCA analysis assumes 6 ADS valves in addition to a single failure. It is therefore appropriate to permit one of the required valves to be out-of-service for up to 14 days without materially reducing system reliability.

3/4.5.3 SUPPRESSION CHAMBER

The suppression chamber is also required to be OPERABLE as part of the ECCS to ensure that a sufficient supply of water is available to the HPCS, LPCS and LPCI systems in the event of a LOCA. This limit on suppression chamber minimum water volume ensures that sufficient water is available to permit recirculation cooling flow to the core (See Figure B 3/4.6.2-1). The OPERABILITY of the suppression chamber in OPERATIONAL CONDITIONS 1, 2 or 3 is required by Specification 3.6.2.1.

Repair work might require making the suppression chamber inoperable. This specification will permit those repairs to be made and at the same time give assurance that the irradiated fuel has an adequate cooling water supply when the suppression chamber must be made inoperable in OPERATIONAL CONDITION 4 or 5.

In OPERATIONAL CONDITION 4 and 5 the suppression chamber minimum required water volume is reduced because the reactor coolant is maintained at or below 200°F. Since pressure suppression is not required below 212°F, the minimum water volume is based on NPSH, recirculation volume, vortex prevention plus a 2'-4" safety margin for conservatism.

3/4.7 PLANT SYSTEMS

BASES

3/4.7.1 CORE STANDBY COOLING SYSTEM - EQUIPMENT COOLING WATER SYSTEMS

The OPERABILITY of the core standby cooling system - equipment cooling water systems and the ultimate heat sink ensure that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of these systems, assuming a single failure, is consistent with the assumptions used in the accident conditions within acceptable limits.

3/4.7.2 CONTROL ROOM AND AUXILIARY ELECTRIC EQUIPMENT ROOM EMERGENCY FILTRATION SYSTEM

The OPERABILITY of the control room and auxiliary electric equipment room emergency filtration system ensures that the rooms will remain habitable for operations personnel during and following all design basis accident conditions. The OPERABILITY of this system in conjunction with room design provisions is based on limiting the radiation exposure to personnel occupying the rooms to 5 rem or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criteria 19 of Appendix "A", 10 CFR Part 50. Cumulative operation of the system with the heaters OPERABLE for 10 hours over a 31 day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters.

3/4.7.3 REACTOR CORE ISOLATION COOLING SYSTEM

The reactor core isolation cooling (RCIC) system is provided to assure adequate core cooling in the event of reactor isolation from its primary heat sink and the loss of feedwater flow to the reactor vessel without requiring actuation of any of the Emergency Core Cooling System equipment. The RCIC system is conservatively required to be OPERABLE whenever reactor pressure exceeds 150 psig even though the LPCI mode of the residual heat removal (RHR) system provides adequate core cooling up to 350 psig.

The RCIC system specifications are applicable during OPERATIONAL CONDITIONS 1, 2 and 3 when reactor vessel pressure exceeds 150 psig because RCIC is the primary non-ECCS source of core cooling when the reactor is pressurized.

With the RCIC system inoperable, adequate core cooling is assured by the OPERABILITY of the HPCS system and justifies the specified 14 day out-of-service period.

The surveillance requirements provide adequate assurance that RCICS will be OPERABLE when required. Although all active components are testable and full flow can be demonstrated by recirculation during reactor operation, a complete functional test requires reactor shutdown. Initial startup test program data may be used to determine equivalent turbine/pump capabilities between test flow path and the vessel injection flow path. The pump discharge piping is maintained full to prevent water hammer damage and to start cooling at the earliest possible moment. The low pressure setpoint allowable value for the discharge line "keep-filled" alarm is based on the head of water between the centerline of the pump discharge and the system high point vent.

PLANT SYSTEMS

BASES

3/4.7.4 SEALED SOURCE CONTAMINATION

The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(c) limits for plutonium. This limitation will ensure that leakage from byproduct, source, and special nuclear material sources will not exceed allowable intake values. Sealed sources are classified into three groups according to their use, with surveillance requirements commensurate with the probability of damage to a source in that group. Those sources which are frequently handled are required to be tested more often than those which are not. Sealed sources which are continuously enclosed within a shielded mechanism, i.e., sealed sources within radiation monitoring or boron measuring devices, are considered to be stored and need not be tested unless they are removed from the shielded mechanism.

3/4.7.5 FIRE SUPPRESSION SYSTEMS

The OPERABILITY of the fire suppression systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The fire suppression system consists of the water system, deluge and/or sprinklers, CO₂ systems, and fire hose stations. The collective capability of the fire suppression systems is adequate to minimize potential damage to safety related equipment and is a major element in the facility fire protection program.

In the event that portions of the fire suppression systems are inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is restored to service. When the inoperable fire fighting equipment is intended for use as a backup means of fire suppression, a longer period of time is allowed to provide an alternate means of fire fighting than if the inoperable equipment is the primary means of fire suppression.

The surveillance requirements provide assurance that the minimum OPERABILITY requirements of the fire suppression systems are met.

In the event the fire suppression water system becomes inoperable, immediate corrective measures must be taken since this system provides the major fire suppression capability of the plant. The requirement for a twenty-four hour report to the Commission provides for prompt evaluation of the acceptability of the corrective measures to provide adequate fire suppression capability for the continued protection of the nuclear plant.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 105 TO FACILITY OPERATING LICENSE NO. NPF-11 AND
AMENDMENT NO. 91 TO FACILITY OPERATING LICENSE NO. NPF-18
COMMONWEALTH EDISON COMPANY
LASALLE COUNTY STATION, UNITS 1 AND 2
DOCKET NOS. 50-373 AND 50-374

1.0 INTRODUCTION

By letter dated January 13, 1995, Commonwealth Edison Company (ComEd, the licensee) requested to amend Facility Operating License No. NPF-11 and NPF-18 for LaSalle County Station, Units 1 and 2. The proposed amendments would revise the pressure alarm setpoint allowable values for the emergency core cooling system (ECCS) and reactor core isolation cooling (RCIC) system "keep filled" pressure instrumentation channels. The purpose of the proposed change is to lower the setpoint allowable values for these parameters to more realistic values based upon calculations performed by the licensee reflecting design changes and system performance. Also, the term "setpoint" is being changed to "setpoint allowable value" to clarify the use of the values. Additionally, two administrative/editorial changes are included to delete technical specification (TS) footnotes which are no longer applicable.

2.0 BACKGROUND

The Low Pressure Coolant Injection (LPCI) subsystems A, B, and C, the Low Pressure Core Spray (LPCS) system, and the High Pressure Core Spray (HPCS) system constitute the ECCS at LaSalle. These systems provide core cooling in the event of a break or leak in the nuclear system process barrier. The RCIC system provides core cooling if the reactor becomes isolated from the main condenser and emergency core cooling is not needed.

A design requirement for the ECCS and the RCIC systems is that cooling water flow to the vessel be initiated rapidly when the systems are called upon to perform their function. The lag between the process demand and initiation of flow into the reactor vessel can be minimized by always keeping the pump discharge lines full of water. In addition, keeping the discharge lines full helps prevent water hammer in the piping system.

To ensure the lines are kept full, a water leg pump is provided for each ECCS division and for the RCIC system. Indication is provided in the main control room as to whether these water leg pumps are operating, and a pressure switch on discharge lines of the ECCS and RCIC pumps provides an alarm in the Control Room on low discharge line pressure. If an ECCS or RCIC discharge line "keep

filled" alarm is activated, system operability is determined by performing a surveillance that involves venting at the high point vent to verify that the system discharge piping is full of water. The setpoints for the "keep filled" pressure alarms are governed by TS 4.5.1.c.2 for the ECCS systems and TS 4.7.3.c.3 for RCIC. The existing alarm setpoints do not accommodate the current plant design and result in low pressure alarms even though keepfill systems are operating properly. This results in unnecessary burdens on plant personnel because they are required, by TSs, to periodically perform the alternate surveillance of venting the systems at the high point vent.

3.0 EVALUATION

The licensee has proposed to change the "keep filled" alarm setpoints contained in TS 4.5.1.c.2 and TS 4.7.3.c.3 for the ECCS and RCIC systems. These alarm setpoints make operators aware that the systems may not be full of water and, therefore, the systems may be vulnerable to water hammer or delayed water delivery to the reactor coolant system in the event the systems are actuated. The instrumentation serves to monitor system readiness, but does not serve any direct event mitigation or post-accident instrumentation function. In addition to the "keep filled" alarms, problems with ECCS or RCIC discharge line fill systems can be detected by annunciators associated with trips of the water leg pumps, periodic surveillances of the water leg pumps performed in accordance with the inservice test (IST) programs, and periodic TS surveillances.

The licensee has performed analyses to determine the required "keep filled" alarm setpoints to ensure the ECCS and RCIC systems remain full of water. These analyses were deemed necessary to accommodate current plant configurations which include the use of the suppression pool as the suction source for HPCS and RCIC. The "keep filled" alarm setpoints for HPCS and RCIC are reduced from the current values in the TS to address the reduced suction pressure associated with the suppression pool compared to the previously assumed suction source, the condensate storage tank. The change in the suction sources results in unnecessary "keep filled" alarms with the existing TS values. The alarm setpoints for the LPCI and LPCS systems have been reduced to a smaller degree as a result of the licensee's analyses. The setpoint analyses have been performed in an attempt to optimize the setpoints such that the function of ensuring system readiness is maintained, but the occurrence of unnecessary or nuisance control room alarms is minimized.

The licensee has based the proposed ECCS and RCIC discharge line "keep filled" alarm setpoint allowable values on the head of water between the centerline of the pump discharge nozzle and the associated system high point vent, the installed instrumentation, and related measuring and test equipment. The analytical limit, setpoint allowable value, and calibration setpoint for each instrument channel were documented in licensee calculations that account for various uncertainties and required allowances. These analyses were performed in accordance with established licensee procedures that are based upon applicable NRC regulatory guides and accepted industry standards. Based upon the description of the licensee's analyses, the staff finds the proposed ECCS and RCIC "keep filled" alarm setpoints acceptable.

In addition to the changes in the alarm setpoints, the licensee has proposed several editorial changes. The term "setpoint" in TS 4.5.1.c.2 and TS 4.7.3.c.3 is proposed to be changed to "setpoint allowable value" to clarify the TS requirements related to the "keep filled" alarms. The licensee has also proposed to delete footnotes related to LaSalle, Unit 1 TS 4.5.1 and TS 3.7.3 for both units. The affected footnotes are no longer relevant due to the temporary nature of the applicable condition or subsequent TS amendments. The staff has reviewed the proposed changes and determined that they are editorial or clarifying in nature and are acceptable.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (60 FR 11129). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

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

Principal Contributor: William D. Reckley

Date: August 15, 1995