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RS-05-084

10 CFR 50.71(e)(4)
10 CFR 50.48

August 16, 2005

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-001

Zion Nuclear Power Station, Units 1 and 2
Facility Operating License Nos. DPR-39 and DPR-48
NRC Docket Nos. 50-295 and 50-304

Subject: Zion Nuclear Power Station Fire Protection Report, Amendment 9

Reference: Letter from P. R. Simpson (Exelon Generation Company, LLC) to U. S. NRC, "Amendment 8 to Zion Fire Protection Report," dated August 21, 2003

In accordance with the requirements of 10 CFR 50.71, "Maintenance of records, making of reports," paragraph (e)(4), Exelon Generation Company, LLC is submitting Amendment 9 to the Fire Protection Report (FPR) for the Zion Nuclear Power Station (ZNPS), Units 1 and 2. This FPR amendment is being submitted within 24 months of the previous ZNPS FPR amendment that was submitted in the referenced letter. The ZNPS FPR is a document incorporated by reference in the ZNPS Defueled Safety Analysis Report. Accordingly, this amendment is due to be submitted by August 21, 2005.

A summary of the changes made to the ZNPS FPR is provided in Attachment 1. These changes reflect the changes that were made through July 5, 2005, under the provisions of 10 CFR 50.48, "Fire protection," paragraph (f), but not previously submitted to the NRC.

Attachment 2 provides the replacement pages for Amendment 9 of the ZNPS FPR as required by 10 CFR 50.71(e) and is accompanied by a list of effective pages and instructions for updating the ZNPS FPR. We have evaluated the FPR changes in accordance with 10 CFR 50.48(f) and concluded the changes do not reduce the effectiveness of fire protection for the facilities, systems and equipment which could result in a radiological hazard, taking into account the current decommissioning plant conditions and activities of ZNPS, and do not require prior NRC approval.

This submittal accurately presents changes made since the previous submittal and reflects information and analysis performed under the provisions of 10 CFR 50.48 but not previously submitted to the NRC.

If you have any questions regarding this letter, please contact Ms. Alison Mackellar at (630) 657-2817.

Respectfully,

Joseph A. Bauer

Joseph A. Bauer
Licensing Manger

Attachments: 1. Summary of Changes – Amendment 9, Fire Protection Report – Zion Station
2. Zion Station – Fire Protection Report – Amendment 9, July 2005

ATTACHMENT 1

SUMMARY OF CHANGES
AMENDMENT 9 OF THE FIRE PROTECTION REPORT - ZION STATION

The "Affected Pages" listed below are the pages revised in Amendment 9. Page numbers are identical between Amendment 8 and Amendment 9.

FPR Revision # 2003-03

This change resulted in changing the reference to the DSAR to Appendix A of the QATR. This change was administrative.

Affected Pages: 2-4

FPR Revision # 2004-01

This change resulted in removal of fire detection and dedicated hose stations inside the Unit 1 and Unit 2 containments. The detection covered areas that were considered Safety Related during plant operation. The cables no longer provide any Safety Related function or any function associated with the safe storage of fuel. Most of the cables have been de-energized. Sump pumps remain operational in these areas. Excluding the hose stations inside the containments, fire suppression will still be available from portable extinguishers and hose stations inside the Auxiliary Building. Access routes are available for fire response personnel responding to a fire inside the containments.

Affected Pages: 2-35, 3-7, 3-9, 3-15, 3-17

ATTACHMENT 2

ZION NUCLEAR POWER STATION
FIRE PROTECTION REPORT, AMENDMENT 9

To perform the August 2005 Zion Fire Protection Report update, please remove the existing pages and insert Amendment 9 pages as follows:

SECTION	REMOVE	INSERT
Title Page	Title page	Title page
List of Effective Pages	pages 1 and 2	pages 1 and 2
Table of Contents	pages 1 thru 7	pages 1 thru 7
Section 2	page 2-4	page 2-4
Section 2	page 2-35	page 2-35
Section 3	page 3-7	page 3-7
Section 3	page 3-9	page 3-9
Section 3	page 3-15	page 3-15
Section 3	page 3-17	page 3-17

ZION STATION

FIRE PROTECTION REPORT

Amendment 9, August 2005

Zion Fire Protection Report
Amendment 9

List of Effective Pages

Zion Fire Protection Report
Amendment 8

List of Effective Pages

Section 3

3-1 through 3-6	Amendment 7
3-7	Amendment 9
3-8	Amendment 7
3-9	Amendment 9
3-10 through 3-14	Amendment 7
3-15	Amendment 9
3-16	Amendment 7
3-17	Amendment 9
3-18 through 3-20	Amendment 7
3-21	Amendment 8
3-22 through 3-33	Amendment 7
3-34	Amendment 8
3-35	Amendment 7
3-36	Amendment 8
3-37 through 3-39	Amendment 7
3-40	Amendment 8
3-41	Amendment 7
3-42	Amendment 8
3-43 through 3-161	Amendment 7
3-162	Amendment 8
3-163 through 3-195	Amendment 7
3-196	Amendment 8
3-197	Amendment 7
3-198	Amendment 8
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3-256 through 3-257	Amendment 8
3-258 through 3-261	Amendment 7
3-262	Amendment 8
3-263 through 3-272	Amendment 7

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2.3.2 Public Fire Department Response

The City of Zion Fire Department is fewer than 2.0 miles west of the site. This full time fire department is contacted immediately upon the receipt of a valid fire alarm. The City of Zion also has two city water hydrants at the north and south ends of the site. The north hydrant is inside the protected area.

The Zion Municipal Fire Department (ZMFD) is trained and equipped for fire fighting to ensure adequate manual fire fighting capability for all areas of the plant containing radiological and/or fire hazards. The ZMFD responds to all types of fires, including large structural fires. The ZMFD requests additional backup units as needed for suppression assistance. The onsite incipient fire responder assists the ZMFD as required. Emergency Response Capability utilizing the ZMFD shall be reassessed periodically as required per station procedures (ZAP 900-01).

Training shall be available to the local fire department to delineate responsibilities, duties, and operational precautions when fighting fires onsite. Zion Station Pre-Fire Plans shall be made available to the local fire department. Where practicable, the training of the local fire department should be coordinated with that of the incipient fire responders.

At least annually, one fire drill will include the Zion Fire Department. The Zion Fire Department may also participate in annual personnel training exercises. At these training exercises, radiological training, special procedures, and equipment hazards are explained. Plant security procedures allow modification or suspension of normal security measures during fires or fire drills, consistent with 10CFR73.55(a)(1) and Regulatory Guide 5.65.

2.4 QUALITY ASSURANCE PROGRAM

QA requirements are described in the EGC Quality Assurance Topical Report (QATR).

Engineered/quality requirements for ITDC SSCs are described in Appendix A of the QATR.

Onsite fire protection systems, structures, and components associated with the protection of equipment required to be functional should be designed, installed, and maintained in accordance with the applicable (state and federal) regulatory requirements, NFPA codes and standards and generally accepted industry practices.

2.5 RADIOLOGICAL HAZARDS

2.5.1 Spent Fuel Pool Systems and SSCs ITDC

Spent Fuel Pool Systems and SSCs designated as ITDC are discussed in DSAR Chapter 3. As discussed in DSAR chapters 3 and 5, these systems are not credited with the mitigation of any remaining analyzed accidents.

The spent fuel pool structure and cooling support systems are built of materials that are inherently resistant to fires. There are no credible fire scenarios that will impact the water filled, steel reinforced, concrete structure or the fuel under water. The spent fuel building structure acts as a fire barrier to prevent fire spread into the spent fuel area from an external fire. A radiological hazard in the spent fuel building resulting from fire is not a credible event.

ZION STATION
FIRE PROTECTION REPORT

TABLE 2.8.2
FIRE PROTECTION FEATURES SUMMARY

AREA DESCRIPTION	FIRE AREA/ZONE	AUTOMATIC FIRE DETECTION	AUTOMATIC FIRE SUPPRESSION	SUPPRESSION SYSTEM TYPE	ATR REQUIRED SUPPRESSION (NOTE 1)
· Unit 1 Containment					
· Reactor Cavity	1.1-1	NO	NO		
· Annular Area	1.2-1	NO	NO		
· Steam Gen. & RCP	1.3-1	NO	NO		
· Operating Floor	1.4-1	NO	NO		NO
· Unit 2 Containment					
· Reactor Cavity	1.1-2	NO	NO		
· Annular Area	1.2-2	NO	NO		
· Steam Gen. & RCP	1.3-2	NO	NO		
· Operating Floor	1.4-2	NO	NO		NO
· Main Control Room Complex					
· Main Control Rm	2.0-0	YES	NO		
· Unit 1 Plant Computer Rm	4.0-1	YES	NO		
· Unit 2 Plant Computer Rm	4.0-2	YES	NO		
· Prime Computer Rm	4.1-1	YES	NO		
· Auxiliary Building Kitchen	18.6-1	YES	NO		
· Work Control Center	18.6-2	YES	NO		
· Unit 1 Outer Cable Spreading Rm	3.1-1	YES	NO		
· Unit 2 Outer Cable Spreading Rm	3.1-2	YES	NO		
· Unit 1 Stairwell Enclosure	18.6A-1	YES (PARTIAL) (Inside Cable Enclosure)	NO		
· Unit 2 Stairwell Enclosure	18.6A-2	NO	NO		
· Unit 1 Inner Cable Spreading Rm	3.2-1	YES	NO		
· Unit 2 Inner Cable Spreading Rm	3.2-2	YES	NO		

Fire Protection Criteria and Measures

This fire zone contains no automatic suppression or detection systems.

Manual fire suppression equipment, including portable fire extinguishers and hose stations are available at containment entry for fire responder use. Access routes are available to fire response personnel responding to a fire in this zone.

Design-Basis Fire

The design-basis fire would result if cable insulation in the zone burned. It could also spread to the other zones inside the containment, since the walls and floors separating these zones are not designated as fire barriers. The fire would not spread beyond the containment.

The design-basis fire is unlikely for the following reasons:

a. The containment is a controlled access area.

b. All lubricating oil normally present has been drained.

A fire in this fire zone cannot affect adjacent fire areas because this zone shares no boundaries with any adjacent fire areas.

Combustible Material and Fire Loading

The combustible material in this fire area consisted of 104 gallons of lube oil (which has been drained), about 420 lb of cable insulation in trays and cabinets, about 48 ft of nuclear instrumentation cable, about 35 lb of flexible connectors (HVAC), 18 modules each of HEPA and pre-filters, 2688 lb of wood, and 4320 lb of charcoal filters. With a floor area of 12,266 ft^2 and a total heat content of 1.161×10^8 Btu, the average fire loading in this area is about 9.465×10^3 Btu/ft^2 with an equivalent fire severity of 7 minutes.

The administrative transient combustible load limit for this fire zone is 8,525 Btu/ft^2.

Fire Protection Criteria and Measures

This fire zone has no general area automatic fire suppression or detection.

Manual fire suppression equipment including portable fire extinguishers and hose stations are available at containment entry for fire responder use. Access routes to this fire zone are available for responding fire response personnel.

Design-Basis Fire

The design-basis fire would result if the combustible materials in this zone burned. This fire could spread to other zones in the containment, since the zone boundaries are not designated as fire barriers, but it would not spread out of the containment building.

The design-basis fire is unlikely, since this zone has a low fire loading and the combustibles present are not evenly distributed, making the likelihood of a fire spreading rather small.

Any fire likely to start in this zone would remain confined to a small area and would not cause any major damage.

Fire Protection Criteria and Measures

This fire zone contains no automatic suppression or detection systems.

Manual fire suppression equipment including portable fire extinguishers and hose stations are available at containment entry for fire responder use. Access routes are available to fire response personnel responding to a fire in this zone.

Design-Basis Fire

The design-basis fire would result and all of the cable insulation burned. All of the equipment in the zone would be damaged. The fire could spread to adjacent zones, since the zone walls are not designated as fire barriers, but would be contained inside the containment building.

The design-basis fire is unlikely for the following reasons:

a. The containment is a controlled access area.

b. All lubricating oil normally present in the RCP's has been drained, and other cable load is spread out.

A fire in this fire zone cannot affect adjacent fire areas because this zone shares no boundaries with any adjacent fire areas.

Combustible Material and Fire Loading

The combustible material in this fire area consisted of about 523.8 lb of cable insulation in trays and cabinets, about 10 ft of nuclear instrumentation cable, about 35 lb of flexible connectors (HVAC), 18 modules each of HEPA and pre-filters, 2688 lb of wood, 4320 lb of charcoal filters, 7.2 lbs of plastic battery casings. With a floor area of 12,266 ft^2 and a total heat content of 1.774 x 10^8 Btu, the average fire loading in this area is about 10,158 Btu/ft^2 with an equivalent fire severity of 8 minutes. The administrative transient combustible load limit for this fire zone is 8,525 Btu/ft^2.

Fire Protection Criteria and Measures

This fire zone has no general area automatic fire suppression or detection.

Manual fire suppression equipment including portable fire extinguishers and hose stations are available at containment entry for fire responder use. Access routes to this fire zone are available for responding fire response personnel.

Design-Basis Fire

The design-basis fire would result if the combustible materials in this zone burned. This fire could spread to other zones in the containment, since the zone boundaries are not designated as fire barriers, but it would not spread out of the containment building.

The design-basis fire is unlikely, since this zone has a low fire loading, and the combustibles present are not evenly distributed, making the likelihood of a fire spreading rather small.

Any fire likely to start in this zone would remain confined to a small area, and would not cause any major damage.