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Exelon Nuclear

10 CFR 2.201

RA09-012

January 29, 2009

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

LaSalle County Station, Units 1 and 2
Facility Operating License Nos. NPF-11 and NPF-18
NRC Docket Nos. 50-373 and 50-374

Subject: Response to NRC Triennial Fire Protection Inspection Report

Reference: 1. Letter from Robert C. Daley (NRC) to Charles G. Pardee (Exelon Generation Company, LLC), LaSalle County Station, Units 1 and 2 Triennial Fire Protection Inspection Report 05000373/2008007, 05000374/2008007, dated December 31, 2008

2. NRC Safety Evaluation Report, NUREG 0519 dated March 1981

In accordance with 10 CFR 2.201 "Notice of Violation," Exelon Generation Company, LLC (EGC) is contesting one Non-Cited Violation (NCV) contained in the referenced inspection report – specifically NCV 05000373(374)/2008-007-02, "Failure to Provide a Sprinkler System for Fire Zone 4F3." This NCV concludes that EGC failed to provide a pre-action sprinkler system for Fire Zone 4F3, which is contrary to the LaSalle County Station (LSCS) Fire Protection Report. EGC has concluded that a pre-action sprinkler system is not required by the LSCS licensing basis and therefore contests the aforementioned NCV.

NCV 05000373(374)/2008-007-02

The referenced letter documented a finding of very low safety significance and associated violation of the license condition to implement and maintain in effect all provisions of the approved fire protection program as described in the Updated Final Safety Analysis Report (UFSAR) as approved through NRC Safety Evaluation Reports. However, because of its very low safety significance and because the issue had been entered into LSCS's corrective action program, the issue was treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. The NCV is restated below.

> A finding of very low safety significance and associated NCV of the license condition was identified by the inspectors for the failure to install a sprinkler system. Specifically, the licensee had installed a pre-action spray system above the suspended ceiling in Fire Zone 4F3 instead of a pre-action sprinkler system as specified by the Fire Protection Report. The licensee subsequently entered the issue into its corrective action program.

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The finding was determined to be more than minor because, the installed spray system was less capable than a sprinkler system in that, a fire would be permitted to grow to a larger size and cause more damage as a result of delayed system actuation. The issue was of very low safety significance due to remaining mitigating system capability.

EGC is contesting this NCV.

Basis for Contesting NCV

EGC determined that the current installation is appropriate for the predominant fire vulnerability for the area, which is a fire in the cable trays. Fire Zone 4F3 is above the Chemistry laboratory's suspended ceiling, and does not contain intervening combustibles. The area does contain vertically stacked solid-bottom cable trays that are equipped with a pre-action spray suppression system.

EGC acknowledges that there are contradictory statements contained in the UFSAR. UFSAR Chapter 9.5.1 describes the existing system as an "in-tray spray system" and also describes the fire hazards analysis and the fire protection design features. The fact that the spray system is installed above the ceiling only is also reflected on UFSAR Figures 9.5-1 sheets 22 and 23.

9.5.1.1.3 "Facility Features"

In the area above the laboratories in the auxiliary building where there are concentrations of cabling above the suspended ceiling, **an automatic water spray system** has been provided for the cable trays.

9.5.1.2.2 Fire Protection For Areas Containing Safety-Related Equipment

The cable spreading rooms, the diesel generator corridors, central file (in South Service Building) and **the concealed cable space over the laboratories** for LaSalle County Station are each equipped with automatic pre-action sprinkler system actuated by ionization detectors. Ionization detectors are installed on the ceilings. These detectors are sensitive enough to alarm at the very inception of a fire when combustion products are first being released. Actuation of one ionization detector causes an alarm locally and in the control room and trips the deluge valve, filling the system with water.

Pre-action sprinkler heads are located adjacent to each cable tray. A heat source is then required for the sprinkler head to actuate and flood the tray. This system is also air supervised, and damage to the system or actuation of a sprinkler head actuates an alarm both in the auxiliary electric equipment room (AEER) and in the control room. If for some reason the ionization detection system was not in service or failed to function, the heat of a fire would cause a supervisory alarm and the deluge valve could be manually opened.

However, UFSAR Appendix H, which contains the Safe Shutdown Analysis, refers to the

system as a "sprinkler system." In Appendix H, the term "sprinkler" appears to have been used in an overly broad context. In accordance with the National Fire Protection Association (NFPA) Handbook 14th edition, NFPA-15 gives guidance for special-applications not covered in the NFPA-13 sprinkler code, leading to the imprecise use of the term "sprinkler" to apply to both types of systems. We acknowledge this imprecise terminology and actions are planned to revise the discussion in Appendix H to correct the error.

EGC conducted an assessment and concluded that the installed pre-action spray system is appropriate for the identified hazard. These are the energized cables in the ceiling space that would have no other combustible materials above negligible amounts. The above-ceiling space has stacked solid-bottom cable tray runs, ventilation ductwork runs and several walkways, all of which would impact the effectiveness of a general sprinkler system. The installed pre-action spray design would be more effective than a sprinkler system for the identified hazard. At the time of construction, the installed pre-action spray design is also an approach that was recommended by the American Nuclear Insurers (ANI- formerly MAERP-NELPIA) guidelines for protecting cable trays in concealed spaces, which NRC ASB 9.5-1 indicates provides "valuable criteria" for the design of new plants.

EGC further determined that replacing the existing pre-action spray system with a sprinkler system would result in a decrease in the effectiveness of the fire protection features. As previously noted, the area contains vertically stacked cable trays, with a cable fire being the predominant hazard. There are no intervening combustibles in the area of interest. A sprinkler system in this application would be particularly ineffective at suppressing cable fires in all but the top cable tray run. The lower cable trays would be shielded from sprinkler heads' output by the solid-bottom trays above them, as would blockage / interference from the ductwork and walkway runs. With the configuration of vertically stacked cable trays, sprays that are aimed directly into those trays provide the most immediate fire suppression for the dominant hazard.

NRC stated in the violation that sprinklers were to be installed instead of the cable tray pre-action sprays. While some scenarios might be postulated where a sprinkler system would actuate sooner, those scenarios are not consistent with the dominant hazard for this particular application, the protection philosophy chosen and configuration, and are dependent on postulating a large fire where there are no combustibles. The sprinkler design would compromise the response to the primary hazard in order to improve the response to a less credible scenario.

As stated in Fire Protection Report, section H.3.4.18 and Table H.3-2 and the NRC Safety Evaluation Report (SER) dated March 1981, paragraph 9.5.1.2 and 9.5.1.4, the credited fire protection for the Chemistry laboratory area (located below the ceiling) is detection (detectors in the ventilation duct) with manual suppression (fire brigade), due to the light hazard in the laboratory area. For the space above the Chemistry laboratory area, the primary concern is the routing of cables in a concealed space, where fire brigade access for manual suppression is difficult (BTP ASB 95-1 position C.4.a.6). In accordance with BTP ASB 9.5-1 section C.1.b, the fire hazard analysis postulates a severe fire of the in-

situ (stacked cable trays) and transient combustibles (negligible due to being inaccessible) in the overlab space, thereby identifying the cabling as the dominant hazard, and the use of the spray system as an appropriate means of protection. The installed spray system remains fully capable of controlling a severe fire in the overlab space, as well as ensuring that the fire area boundaries are not challenged by a fire within the space, therefore the objectives of BTP ASB 9.5-1 section C.1.b are satisfied.

For the space above the Chemistry laboratory area, the identification of the cabling as the dominant hazard leads to the use of the spray system as the protection. If the cables are subjected to temperatures that threaten their integrity due to a fire in this area, the sprays have an enhanced tendency to detect and actuate since the spray heads are installed under the run of cable trays. This design feature traps/focus combustion gas coming from the cable trays located directly below. The actuating temperature for the sprays is far below the cable insulation temperature ratings. Sprinklers in the above-ceiling space are not and cannot be credited with a fire suppression in the Chemistry laboratory itself, because the ceiling would interfere with sprinkler function.

To further confirm the adequacy and capability of the as-built fire suppression system for this application, EGC engaged Schirmer Engineering to evaluate the effectiveness for both the primary hazard (the cables) and the fire protection boundary. These evaluations and models will allow additional comparison on the effectiveness of the installed pre-action spray system versus a pre-action sprinkler system. Schirmer Engineering has conducted a walkdown of the Chemistry laboratory area, and additional evaluations are being performed to document the issues and impacts related to the as-found configurations in the laboratory area.

Based on the complexity of the fire modeling, we expect that validation of the analysis of the existing fire suppression system will be completed by the end of February 2009. EGC is committing to provide the results of this analysis to the NRC as a supplement to this letter by March 16, 2009.

Should you have any questions concerning this letter, please contact
Mr. Terrence W. Simpkin, Regulatory Assurance Manager, at (815) 415-2800.

Respectfully,

Daniel J. Enright
Site Vice President
LaSalle County Station

Attachment: Summary of Regulatory Commitments

cc: NRC Regional Administrator, NRC Region III
NRC Director, Office of Enforcement
NRC Senior Resident Inspector, LaSalle County Station

SUMMARY OF REGULATORY COMMITMENTS

The following table identifies commitments made in this document.

COMMITMENT	COMMITTED DATE OR "OUTAGE"	COMMITMENT TYPE	
		ONE-TIME ACTION (Yes/No)	PROGRAMMATIC (Yes/No)
EGC engaged Schirmer Engineering to evaluate the effectivenes for both the primary hazard (the cables) and the fire protection boundary. These evaluations and models will allow additional comparison on the effectiveness of the installed pre-action spray system versus a pre-action sprinkler system. Additional evaluations will also be performed to document the issues and impacts related to the as-found configurations in the laboratory area. EGC is committing to provide the results of this analysis to the NRC as a supplement to this letter.	March 16, 2009	Yes	No