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

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JAN 23 1985

MEMORANDUM FOR: Thomas M. Novak, Assistant Director
for Licensing
Division of Licensing

FROM: William V. Johnston, Assistant Director
Materials, Chemical & Environmental Technology
Division of Engineering

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SUBJECT: FIRE PROTECTION SUPPLEMENTAL SAFETY EVALUATION FOR LASALLE COUNTY STATION UNITS 1 & 2 - FIRE DAMPER SURVEILLANCE PROGRAM

Plant Name: LaSalle County Nuclear Station
Docket Nos.: 50-373/374
Licensing Stage: OR
Milestone No.: TAC #55649/50
Responsible Branch & Project Manager: LB #3; A. Bournia
CMEB Reviewer: R. Ferguson
Requested Completion Date: January 1, 1985
Review Status: Complete

In our SER, we indicated that we would reassess the adequacy of the technical specifications for fire damper surveillance on a generic basis, prior to the fire periodic surveillance required by the LaSalle Technical Specification 4.7.6.1 to be conducted (June 1985). By letter dated August 21, 1984, the licensee superseded the March 15, 1984 letter and proposed a surveillance program in a report "Technical Basis of the LaSalle County Station Fire Damper Surveillance Program" August 1984. We have reviewed the proposed program in light of a technical specification that would establish a periodic test program for fire dampers. We have concluded that because, at present, such a test program for certain fire dampers is voluntary, the proposed program is acceptable.

Our evaluation and SALP input is enclosed.

William V Johnston

William V. Johnston, Assistant Director
Materials, Chemical & Environmental
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Enclosure: As stated

cc: See next page

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JAN 28 1985

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Chemical Engineering Branch/Fire Protection Section
Supplemental Safety Evaluation Report
LaSalle County Station Units 1 & 2
Docket Nos. 50-373/374

9.5.2 Other Items Related to the Station Protection Program

9.5.2.2 Fire Doors and Dampers

In Supplement No. 8 to our Safety Evaluation Report, we indicated that the licensee is committed to develop a surveillance program to ensure operability of the dampers prior to exceeding 5 percent power and that prior to the first periodic surveillance, required by Technical Specification 4.7.6.1, to be conducted 18 months after the issuance of the license (June 1985), the NRC staff intends to reassess the adequacy of this Technical Specification on a generic basis.

By letter dated March 15, 1984, the licensee proposed a surveillance program of the fire dampers. By letter dated August 21, 1984, the licensee superseded the March 15, 1984 letter with a report, "Technical Basis of the LaSalle County Station Fire Damper Surveillance Program".

Before evaluating the licensee's proposal, we will summarize the development of NRC's guidance regarding fire dampers.

Following the Brown's Ferry fire in 1975, the NRC's Special Review Group made recommendations concerning fire dampers:

"The Review Group recommends that ventilation systems in all operating plants be reviewed and upgraded as appropriate to assure their continued functioning if needed during a fire. It is further recommended that present designs be provided with the capability of isolating fires by use of cutout valves or dampers."

Capability for the control of ventilation systems to deal with fire and smoke should be provided, but such provisions must be compatible with requirements for the containment of radioactivity. These provisions and requirements may not be mutually compatible and in some cases may be in direct conflict with each other. For example, operating ventilation blowers to remove smoke may fan the fire; the same action may also result in a release of radioactivity, either directly by transport of radioactive particles with the smoke or by decreasing the effectiveness of the filters provided to contain the radioactivity. It is obvious that some compromise will be necessary and that flexibility of operation may be needed, depending on the nature of any event that may occur. The pros and cons of each provision and requirement should be considered in the development of detailed guidance." (NUREG-0050, pg. 25)

The NRC's guidance adopted this recommendation:

"(J) Floors, walls and ceilings enclosing separate fire areas should have a minimum three hour fire rating. ...Penetration for ventilation systems should be protected by a standard "fire door damper" where required. (Refer to NFPA 80, "Fire Doors and Windows.")" (BTP APCSB 9.5-1, Section B.1.(j)).

This same guidance was set forth in Appendix A to BTP APCSB 9.5-1. In the July 1981 guidance, this guidance was revised slightly:

"(4) Penetration openings for ventilation systems should be protected by fire dampers having a rating equivalent to that required of the barrier (see NFPA-90A "Air Conditioning and Ventilating Systems"). Flexible air duct coupling in ventilation and filter systems should be noncombustible." (BTP CMEB 9.5-1, Section C.5.a.(4).)

At the time LaSalle was licensed, the Standard Technical Specifications required that fire dampers associated with gas suppression systems be tested for operation at least every 18 months. They also required a visual inspection of all fire dampers in fire rated assemblies at least once every 18 months.

At present, the staff is considering revising the Standard Technical Specifications to require that at least 10% of all the fire dampers be tested at least every 18 months.

This revision was initiated because several Regional inspections revealed inoperable dampers due to binding, dust accumulation, or air flow.

The licensee's proposed program can be summarized as follows:

There are 308 fire dampers in the fire barriers of concern.

The licensee has established two groups of fire dampers, i.e., (1) those that will be tested and (2) those that will be inspected. Group 1 contains 43 dampers. Group 2 contains 265.

For those dampers that will be tested, the licensee proposes a test frequency based on ASME Section XI, Rules for In-Service Inspection of Nuclear Power Plant Components, Subarticle IWB-2400, Table IWB-2412-1 (Inspection Program B). Thus, for a 10 year inspection interval for 43 dampers, the sample size would be:

Inspection Period (years)	Sample Size %		Sample Size No.	
	min.	max.	min.	max.
3	16	34	7	14
7	50	67	21	29
10	100	100	43	43

The licensee states that (1) modifications will be required on 15 dampers to permit the visual inspection required by the present technical specifications at an estimated cost of $9,770, (2) modifications will be required on 22 dampers to permit the test of Group 1 dampers as proposed by the licensee at an estimated additional cost of $19,680, and (3) modifications will be required on 88 dampers to permit tests of all dampers as may be required by the staff's recommended test program at an estimated additional cost of $82,050.

At the present, time the licensee's testing program for fire dampers that are not associated with gas suppression system is voluntary. However, the staff is in the process of revising such test requirements and the need for back-fitting such requirements. The proposed program is not as thorough as the staff's proposed program.

Because the test program is voluntary, we conclude that it is acceptable.

LaSalle Units 1 & 2

Input to the SALP Process

A. Functional Area: Fire Protection - Fire Damper Surveillance Program

1. Management involvement in assuring quality: The applicant's activities exhibited evidence of prior assignment of priorities to fire protection safety. A qualified fire protection engineer was retained to resolve technical issues.

Rating Category 2

2. Approach to resolution of technical issues: The applicant's submittal shows a clear understanding of the specific fire protection principles involved with the resolution of technical issues. The applicant's additional fire protection commitments reveal a conservative approach toward providing an adequate level of safety.

Rating Category 2

3. Responsiveness to NRC Initiatives: The applicant provided timely responses to our requests for information.

Rating Category 2