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 Office of Nuclear Reactor Regulation, Director

SUBJECT: Provides description of util plan for resolving design deficiencies in recently installed fire dampers. Discussion w/vendor & Bechtel continuing. Plant will proceed w/startup & operate until Part 21 design deficiency corrected.

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January 18, 1985

Director
Office of Nuclear Reactor Regulation
U S Nuclear Regulatory Commission
Washington, DC 20555

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

Plan for Resolution of Fire Damper Design Deficiencies

The purpose of this letter is to provide, for the information of the NRC Staff, a description of our plan for resolving design deficiencies in fire dampers recently installed at the Monticello Nuclear Generating Plant. During the current refueling and maintenance outage, a number of new fire dampers were installed to meet the requirements of 10 CFR Part 50, Appendix R. Subsequently the manufacturer, Ruskin Manufacturing Division of Phillips Industries, Incorporated, reported in accordance with 10 CFR Part 21 a design defect involving failure to fully close under actual air flow conditions.

Twenty-nine Ruskin dampers were installed at Monticello. All dampers successfully passed pre-operational tests which did not involve air flow. In recent conversations with Ruskin and Bechtel, we were informed that air stream velocities of 2000 to 3000 fpm would be sufficient to prevent closure. In view of this fact, all 29 dampers were tested under their actual installed flow conditions. Testing consisted of removing the thermal link and using a trip wire to actuate the closing of the damper. Seven dampers did not pass this test and failed to fully close.

Discussions with Ruskin and Bechtel are continuing in an effort to determine the precise problem and to develop a suitable field change. Indications are that a field change may be available within one to two months. When this field change is finalized, it will be installed as directed by Ruskin on those dampers requiring modification. Dampers that can be worked on during plant operation will be modified as soon as practicable. Dampers that cannot be worked on during plant operation will be modified during the first planned shutdown of sufficient length to accomplish the work, or at the next refueling outage, whichever occurs first.

The following information is offered to justify safe plant operation until the Ruskin fire dampers can be modified:

- a. Temporary procedure changes have been made which require shutdown of ventilation units associated with each of the seven affected dampers in the event of fire in a zone served by the dampers.

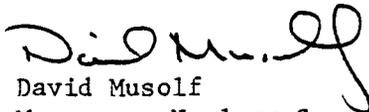
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- b. The fire severity, or combustible loading spread over the area of the fire zone, is very low to moderate in all affected fire zones. See the attached table.
- c. All affected zones are provided with automatic detection with alarming in the Control Room except one (the TIP room).
- d. Access for manual fire fighting activities is good. Hose stations and portable fire extinguishers are available in or adjacent to each affected zone.
- e. As installed, the steel duct work itself provides a one-hour fire barrier. NFPA-90A recognizes this fact in its provision that no fire damper is required where a steel duct penetrates a wall having a one-hour fire rating. Tests conducted at UL by the Thermal Insulation Manufacturer's Association in accordance with ASTM-E119 have confirmed this. Actual fire severity in each affected zone is less than one-hour (a three-hour rating is specified in Appendix R independent of the actual fire severity).
- f. During damper testing under actual flow conditions, all dampers were found to close to at least 90% of the damper flow area. Thus, damper failure would still offer significant protection.
- g. Plant attendants in the Reactor and Turbine Buildings routinely make inspection tours at the start of their shifts to check for transient combustibles or other fire hazards.

In view of this information we have concluded that the plant may proceed with start-up and operate during the period until the 10 CFR Part 21 design deficiency has been corrected.

Please contact us if you have any questions related to the information we have provided related to our plans for resolving problems with Ruskin fire dampers.


David Musolf
Manager - Nuclear Support Services

DMM/dab

c: Regional Administrator-III, NRC
NRR Project Manager, NRC
Resident Inspector, NRC
G Charnoff

Attachment

Director of NRR
 January 17, 1985
 Attachment

| <u>Fire Dampers Which Do Not Fully Close With Air Flow</u> | <u>Adjacent Fire Zones</u> | <u>Equivalent Fire Severity (min)+</u> | <u>Fire Detection w/Control Room Alarm</u> | <u>Ventilation Unit to be Tripped</u> |
|--|--------------------------------|--|--|---|
| V-DF-512 | 12A | 19 | Smoke | V-EF-9 |
| | 14A | 10 | Smoke | |
| V-DF-516 | 12A | 19 | Smoke | V-AC-2 |
| | 14A | 10 | Smoke | |
| V-DF-520 | 12C | 20 | Temperature | V-EF-30 |
| | 13C | 36 | Smoke | |
| V-DF-212 | 1F | 1 | Smoke | V-EF-24 |
| | 2A | 46 | Smoke | |
| V-DF-214 | 2E | 8 | * | V-EF-24 |
| | 2F | 1 | Temperature | |
| V-DF-233 | 3D | 4 | Smoke | V-EF-24 |
| | 3E | 8 | Smoke | |
| V-DF-242 | 1F | 1 | Smoke | V-EF-25 |
| | 2C | 13 | Smoke | |

*Fire zone 2E is the TIP room. No immediate fire detection.
 The adjacent zone 2B has smoke detection. The TIP room
 is locked for radiation protection purposes.

+The source for these numbers are updated calculations performed
 to update the Fire Hazards Analysis