NRC FORM 366
(7-77)

U. S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

CONTROL BLOCK: ① (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 LICENSEE CODE: NYJAF1 ② LICENSE NUMBER: 00-00000-000 ③ LICENSE TYPE: 41111 ④ CAT ⑤

CON'T 0 1 REPORT SOURCE: L ⑥ DOCKET NUMBER: 05000333 ⑦ EVENT DATE: 041982 ⑧ REPORT DATE: 101982 ⑨

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES ⑩

0 2 FINAL REPORT: During normal operation, surveillance testing indicated
0 3 that four smoke detectors, added as part of the fire protection upgrade
0 4 program, were inoperable because the connecting cabling had not been
0 5 properly terminated. A later event identified a similar problem with
0 6 heat detectors associated with a local area water spray system. The
0 7 attachment describes the events in detail. Compensatory protection
0 8 was established when the problems were discovered.

0 9 SYSTEM CODE: AB ⑪ CAUSE CODE: D ⑫ CAUSE SUBCODE: Z ⑬ COMPONENT CODE: ZZZZZZ ⑭ COMP. SUBCODE: Z ⑮ VALVE SUBCODE: Z ⑯

⑰ LER/RO REPORT NUMBER: EVENT YEAR: 82 — SEQUENTIAL REPORT NO.: 018 / OCCURRENCE CODE: 03 REPORT TYPE: X — REVISION NO.: 1

ACTION TAKEN: G ⑱ FUTURE ACTION: G ⑲ EFFECT ON PLANT: Z ⑳ SHUTDOWN METHOD: Z ㉑ HOURS ㉒: 0000 ATTACHMENT SUBMITTED: Y ㉓ NPRD-4 FORM SUB.: N ㉔ PRIME COMP. SUPPLIER: Z ㉕ COMPONENT MANUFACTURER: Z999 ㉖

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS ㉗

1 0 Procedural error and management inefficiencies resulted in a failure
1 1 to properly terminate and test the new smoke and heat detectors were
1 2 the causes of this event. This problem is considered reportable under
1 3 TS 6.9.A4.2.C. The attachment describes the causes of the events in
1 4 detail and the corrective actions implemented by the Licensee.

1 5 FACILITY STATUS: E ㉘ % POWER: 100 ㉙ OTHER STATUS ㉚: NA METHOD OF DISCOVERY: B ㉛ DISCOVERY DESCRIPTION ㉜: Surveillance Test

1 6 ACTIVITY RELEASED: Z ㉝ CONTENT OF RELEASE: Z ㉞ AMOUNT OF ACTIVITY ㉟: NA LOCATION OF RELEASE ㊱: NA

PERSONNEL EXPOSURES

1 7 NUMBER: 000 ㊲ TYPE: Z ㊳ DESCRIPTION ㊴: NA

PERSONNEL INJURIES

1 8 NUMBER: 000 ㊵ DESCRIPTION ㊶: NA

LOSS OF OR DAMAGE TO FACILITY ㊸

1 9 TYPE: Z ㊷ DESCRIPTION: NA

PUBLICITY

2 0 ISSUED: N ㊹ DESCRIPTION ㊺

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PDR ADOCK 05000333
S PDR

NRC USE ONLY

NAME OF PREPARER ____________ PHONE: ____________

GPO 917-926

POWER AUTHORITY OF THE STATE OF NEW YORK
JAMES A. FITZPATRICK NUCLEAR POWER PLANT

DOCKET NO. 50-333

ATTACHMENT TO LER-82-018/03X-1

NON-CONNECTION OF SMOKE AND HEAT DETECTORS
LER-82-018, REVISION 1

The four smoke detectors reported in LER-82-018/03X-0 (5-17-82) were part of Plant Modification F1-79-24 consisting of the installation of 284 high-voltage supervised smoke detectors. The four smoke detectors in question were to be tied into an existing smoke detection system, whereas all of the other new smoke detectors were to be connected to one of seven new smoke detection panels located throughout the plant. Because the four smoke detectors only appeared on one conduit drawing (whereas all of the rest appeared on wiring diagrams, vendor drawings, and electrical schematics, as well as on conduit drawings), the final termination of these four detectors was overlooked and was not included in the modification preoperational test.

The installation of the new smoke detection system was performed in three phases: The first consisted of the installation and interconnection of the smoke detectors throughout various areas of the plant. This installation began in February 1980. The four smoke detectors referred to above were installed during this phase, but were not connected to the existing energized system. At that time, the intention was to energize them when the remainder of the new smoke detectors were energized.

In August 1980, six months after the first phase began, the seven new smoke detection panels were delivered and the second phase consisting of the installation of the panels and the termination of the smoke detector cables began.

The preoperational (PREOP) test procedure which prescribed the energization and testing of the new smoke detection system, was written in August of 1980 while final installations and terminations were being completed. The test was written utilizing information taken from vendor technical manuals, vendor drawings, wiring diagrams, and electrical schematics. Unfortunately, the four smoke detectors did not appear on any of these drawings and, as a result, were overlooked and not included in PREOP test procedure.

In November, 1980, approximately nine months after starting the modification. The PREOP test procedure was performed and all seven smoke detector panels were energized and tested. A program of hourly inspections of the new smoke detector panels was initiated because the delivery of the new control room fire panel which monitors these seven panels was delayed. Since the surveillance tests for the new smoke detection system were different from the tests for the old system, it was not apparent that the four new smoke detectors had not been connected to the old system.

The new control room Fire Panel installation was completed in November, 1981, 21 months after the beginning of the smoke detector modification. The inoperability of the four smoke detectors was discovered during subsequent surveillance tests.

These four detectors are located in two ventilation mechanical equipment rooms located above and adjacent to the two electrical switchgear bays. The rooms are enclosed by block walls and contain mostly ventilation fans and control devices. No combustible material is stored in these areas.

In addition to the smoke detectors reported above, four additional heat detectors which are part of Plant Modification F1-80-25 were found inoperative on September 1, 1982. Plant Modification F1-80-25 provided for the installation of water sprays and heat detectors in the Reactor Building in order to protect motor control centers (MCC). In this instance, the procedure failed to include a step for the actual connection of the two heat detector cables and the PREOP test procedures concerning these heat detectors did not fully test the complete circuit.

The piping portion of the MCC Cable Trays Water Spray System was completed in September of 1980 and the heat detectors and local water spray control panel installations were completed by late November 1980. However, the local water spray control panel could not be permanently energized or fully tested until the new control room Fire Panel was installed.

When the Fire Panel was installed, the system was PREOP tested. However, procedural deficiencies resulted in not connecting or testing the heat detectors. The inoperability of the detectors was identified during subsequent routine surveillance testing of the fire system.

The area that these heat detectors monitor is also covered by operating smoke detectors and plant personnel pass through this area quite frequently. No combustible material is stored in this area.

The fundamental causes of the above described conditions were:

(a) Inadequate procedure preparation and review which resulted in:

  (1) Failure to terminate detector cables.

  (2) Failure to test all portions of newly installed circuits.

(b) Inadequate management controls which created unrealistic time constraints and forced procedure development with limited review time.

(c) Poor vendor performance which created delay in the Control Room Fire Panel delivery and caused an excessively long modification and PREOP test cycle.

The following immediate corrective action was initiated:

(a) Establishment of compensatory fire watch until detector installation was complete and subsequently tested.

(b) Verification that surveillance testing had adequately tested all remaining fire detection systems and verified proper operation.

The following long term corrective action will be taken to prevent recurrence of this problem:

(a) JAF Administrative Procedure No. 2.3 "Procedure for Preoperational Tests" will be revised to require additional control concerning preoperational testing methodology and review responsibility. More stringent engineering reviews of test procedure content and detail will be required of future preoperational tests.

Revision to this procedure will be completed by December 1, 1982.

(b) Longer term planning controls have been implemented which will permit more orderly modification development and installation.