

U. S. NUCLEAR REGULATORY COMMISSION

Region I

Report No. 50-277/84-11
50-278/84-11
Docket No. 50-277
50-278
License No. DPR-44 Priority _____ Category C
DPR-56

Licensee: Philadelphia Electric Company
2301 Market Street
Philadelphia, Pennsylvania 19101

Facility Name: Peach Bottom

Meeting at: USNRC, Region I, King of Prussia, Pennsylvania

Meeting conducted: April 12, 1984

NRC Personnel: *A. R. Blough* 4/13/84
A. R. Blough, Sr. Resident Inspector date signed

J. H. Williams 4/18/84
J. H. Williams, Resident Inspector date signed

Approved by: *L. E. Tripp* _____ date signed
L. E. Tripp, Chief 4/30/84
Reactor Projects Section 3A date signed

Enforcement Conference on April 12, 1984 (Report 50-277/84-11; 50-278/84-11)
Meeting Summary: Special enforcement conference convened to discuss findings of
Region I Inspections 278/83-32, 277/84-01 & 278/84-01, and 277/84-03
and 278/84-03, relative to individual rod scrambling and several LCO violations.
Senior Philadelphia Electric Company, NRC Region I and I&E management personnel
attended this two hour meeting at the Region I office.

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DETAILS

1. Attendees

Philadelphia Electric Company

V. S. Boyer, Senior Vice President, Nuclear Power
S. L. Daltroff, Vice President, Electric Production
M. J. Cooney, Manager, Nuclear Production
W. T. Ullrich, Superintendent, Nuclear Generation Division
R. S. Fleischmann, Station Superintendent, Peach Bottom
G. M. Leitch, Station Superintendent, Limerick
R. H. Logue, Superintendent, Nuclear Services
J. E. Winzenried, Technical Engineer, Peach Bottom
S. R. Roberts, Operations Engineer, Peach Bottom
L. F. Rubino, Engineer in Charge, Fuel Management Section
J. W. Spencer, Startup Director, Limerick
J. M. Corcoran, Limerick, Quality Assurance
J. L. Collings, Bechtel, Project Operations, Limerick

U.S. Nuclear Regulatory Commission

T. E. Murley, Regional Administrator
J. M. Allan, Deputy Regional Administrator
R. W. Starostecki, Director, DPRP
R. R. Keimig, Chief, Projects Branch #3
L. E. Tripp, Chief, Section No. 3A
A. R. Blough, Sr. Resident Inspector
J. H. Williams, Resident Inspector
J. M. Gutierrez, Regional Counsel
D. S. Holody, Enforcement Coordinator
J. A. Axelrad, Director, Enforcement, I&E
P. R. Farrow, Enforcement Staff, I&E

2. Meeting Purpose

To discuss events involving individual control rod scrambling, reactor heatup rates, reactor vessel pressurization at low temperature, and slow control rod scram times.

3. Events of Concern

The NRC identified the following violations as being of concern.

3.1 Individual rod scrambling for normal shutdown. (see NRC:RI Reports 278/83-32 and 84-01).

- 3.2 Excessive reactor heat-up rates. (See NRC:RI Report 84-03.)
- 3.3 Reactor pressurization at low temperature. (See NRC:RI Report 84-03.)
- 3.4 Inoperable control rod - slow scram time. (See NRC:RI Report 84-03.)

4. Cause and Safety Significance

- 4.1 The NRC stated that the individual rod scrambling violation appeared to be caused by inadequate 50.59 review of procedure changes associated with normal plant shutdown. The safety significance is a potential rod drop accident which results in fuel damage.
- 4.2 The NRC stated that the excessive heatup rate violations appeared to be caused by human error, inadequate supervision, and procedural guidance. These events were of minor safety significance.
- 4.3 The NRC stated that the reactor pressurization at low temperature violation appeared to be caused by a poorly written procedure and failure to follow the procedure. This event was of minor safety significance.
- 4.4 The NRC stated that the inoperable control rod violation appeared to be caused by inadequate review of trainee's work. The safety concern over this event relates to shutdown margin requirements.

5. Licensee Discussions

5.1 Causes

Philadelphia Electric Company management acknowledged the events and causes. In response to questions raised at a January meeting with NRC as to whether the plant was in an analyzed condition for a Rod Drop Accident (RDA) during the November 17, 1983 shutdown utilizing individual rod scrams, the licensee presented results of a GE study. A copy of the study will be provided to NRC. The study concluded that no safety problem existed when the reactor was above 10% power. Below 10% power, with worst case operator error and FSAR analyses techniques, the results were outside the design basis for RDA. Using moderator feedback effects, as discussed in BNL/NUREG-21819, the RDA was within the FSAR bounds. The 10 CFR 50.59 review conducted for the 1977 procedure change to allow individual rod scrambling was reconstructed from memory. Reviews for procedure changes were not well documented at that time.

5.2 Licensee Initiated Corrective Actions

- Stopped practice of individually scrambling control rods.
- Restored RWM to vendor recommended sequence.

- Revised appropriate procedures.
- Strengthened procedural controls.
- PORC will better document procedure changes in the future.
- Senior engineers were requested to review their areas for weaknesses in procedures.
- Management issued instructions to operators to maintain heatup rates of 60-80°F per hour. Procedures changed to indicate this.
- Placed line on chart recorder for operator guidance.
- Simulator training modified to emphasize importance of staying within heatup limits.
- Directed inside supervisor to oversee operators actions more closely.
- Procedure on valve lineups for establishing short and long path recirculation revised.
- Initiated an in-depth job task analysis.
- Tested all scram solenoid prior to Unit 3 startup after discovering rod with slow scram time. Also tested backup scram valves.
- Revised test procedure ST10.9, CRD Scram Insertion Timing.
- Tested scram time of each rod during power ascension.
- Reviewed QA/QC controls on scram pilot valve rebuild kits and replacement parts.
- Stopped using Loctite 242 on scram pilot valves.
- Designed means of acoustically monitoring solenoid valve movement and implemented weekly check for solenoid plunger dropout during half-scrams. The test frequency has been changed to biweekly at this time.
- Initiated engineering evaluation of impact of excessive heat rate on reactor vessel.

6. Conclusion

The licensee's corrective actions were discussed in some detail. The NRC thanked the licensee for his input and indicated that NRC review would be facilitated by the licensee-provided information.