



March 30, 1982

SECY-82-137

POLICY ISSUE
(Notation Vote)

For: The Commissioners

From: William J. Dircks
Executive Director for Operations

Subject: ABNORMAL OCCURRENCE RECOMMENDATION - MAJOR DEFICIENCIES IN
MANAGEMENT CONTROLS AT A NUCLEAR POWER PLANT

Purpose: Approval of an abnormal occurrence determination.

Discussion: Enclosed is a draft Federal Register notice describing as an abnormal occurrence several instances of serious deficiencies in management controls at Pilgrim Unit 1. The first involved noncompliance with provisions of 10 CFR 50.44, together with a material false statement. The second concerned operation of the facility in violation of a Technical Specification for the containment integrity limiting condition for operation. The third concerned operation of the primary containment at various times between plant startup in 1972 and September 26, 1981 with the drywell temperature greater than the value specified in the FSAR and no adequate safety evaluation performed as required by 10 CFR 50.59. The first two incidents were the subject of a Notice of Violation and Proposed Imposition of Civil Penalties in the amount of \$550,000, issued on January 18, 1982. At the same time, an Order modifying the license was issued in regard to improving management controls of licensed activities. The third incident was cited as an item of noncompliance.

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8204/60262
XA

This item is proposed for reporting based on Example I.D.3 ("For All Licensees") of the abnormal occurrence policy statement published in the Federal Register (42 FR 10950) on February 24, 1977; i.e., a serious deficiency in management or procedural controls in major areas can be considered an abnormal occurrence.

Recommendation: That the Commission:

1. Approve the subject proposed abnormal occurrence recommendation together with its associated Federal Register Notice and
2. Note that following approval, the Office of Congressional Affairs will notify the appropriate Congressional Committees of the intent to publish the Federal Register Notice.

Scheduling: While no specific circumstances require Commission Action by a particular date, it is desirable to disseminate abnormal occurrence information to the public as soon as possible. It is expected that Commission action within two weeks of receipt of this draft proposal would permit publication in the Federal Register about 10 days later.



William J. Dircks
Executive Director for Operations

Enclosure:
Draft Federal Register
Notice

Commissioners' comments should be provided directly to the Office of the Secretary by c.o.b. Friday, April 16, 1982.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT Friday, April 9, 1982, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional time for analytical review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

DISTRIBUTION

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NUCLEAR REGULATORY COMMISSION
ABNORMAL OCCURRENCE
MAJOR DEFICIENCIES IN MANAGEMENT CONTROLS
AT A NUCLEAR POWER PLANT

Section 208 of the Energy Reorganization Act of 1974, as amended, requires the NRC to disseminate information on abnormal occurrences (i.e., unscheduled incidents or events which the Commission determines are significant from the standpoint of public health and safety). The following incident was determined to be an abnormal occurrence using the criteria published in the Federal Register on February 24, 1977 (42 FR 10950). Example I.D.3 ("For All Licensees") in Appendix A notes that a serious deficiency in management or procedural control in major areas can be considered an abnormal occurrence. The following description of the incident also contains the remedial actions taken.

Date and Place - On January 18, 1982, the NRC issued a Notice of Violation and Proposed Imposition of Civil Penalties for \$550,000, together with an Order Modifying the License Effective Immediately, to Boston Edison Company (licensee for the Pilgrim Nuclear Power Station) for alleged management control deficiencies, involving control of combustible gases inside containment and maintenance activities pertaining to the reactor core isolation cooling system. On February 4, 1982, the licensee was further cited for various violations, including inadequate management controls for operation of the plant with drywell temperatures in excess of design values. The Pilgrim Nuclear Power Station (Pilgrim Unit 1) utilizes a boiling water reactor and is located in Plymouth County, Massachusetts.

Nature and Probable Consequences - There were three events at Pilgrim Unit 1 which indicated serious deficiencies in management controls.

The first involved noncompliance with the provisions of 10 CFR 50.44. On May 29, 1981, the NRC was notified by the licensee that Pilgrim Unit 1 was not in compliance with the provisions of 10 CFR 50.44 regarding the control of post accident combustible gas mixtures in containment.

On November 28, 1978, 10 CFR 50.44 became effective and required that licensees of light water reactors conduct analyses regarding hydrogen evolution following certain postulated accidents and make appropriate design and equipment modifications such that the combustible gases would be controlled. Pilgrim Unit 1 was required as a minimum to have a system capable of purging the containment to the atmosphere following a postulated loss of coolant accident. The purging system was required to meet certain design criteria which included equipment redundancy to assure system function in the event of single component failure or loss of offsite power. However, the facility operated from November 28, 1978 until June 5, 1981 with a containment atmosphere combustible gas control system which did not meet all the requirements of 10 CFR 50.44. The ignition of an uncontrolled accumulation of combustible gases inside containment during certain postulated accident conditions could result in deflagration and a pressure surge of the containment atmosphere having the potential to breach the containment and release substantial quantities of radioactive material to the environment.

Associated with this violation was a material false statement, described below, involving the licensee's statement of compliance with the NRC regulations and subsequent failure of the licensee to notify the NRC of deficiencies after the licensee became aware of them.

The second event concerned operation of the facility in violation of a Technical Specification limiting condition for operation for primary containment integrity. On September 12, 1981, during electrical maintenance

activities, operating personnel de-energized electrical power supplies, which partly disabled the automatic isolation control logic electrical circuits for both of the redundant containment isolation valves in the reactor steam supply pipe to the reactor core isolation cooling system. This resulted in a loss of redundancy provided in the design of the electrical circuits to assure automatic closure of these valves during certain postulated accidents. Failure of these valves to close when required could result in the release of significant amounts of radioactive materials into the environment. The facility was operated in this condition until September 16, 1981 (for a total of about 89 hours) when the misoperation was discovered by the NRC Resident Inspector.

The third event concerned operation of the unit at various times between plant startup in 1972 until September 26, 1981 with the primary containment drywell temperature greater than the Final Safety Analysis Report (FSAR) specified value of 150°F. The FSAR also specifies that the primary cooling and ventilation system be designed to maintain containment temperature at an average value of 135°F (148°F following a reactor scram). Even though the licensee had been aware of the situation for several years, there was no evidence that a safety evaluation had been made as required by 10 CFR 50.59. This apparent lack of management attention was probably the root cause of the following incident which occurred on September 26, 1981. During a routine reactor shutdown and cooldown for refueling, level oscillations of reactor water level instruments were observed. These oscillations occurred four times at approximately 20 minute intervals. Each of these instrument oscillations resulted in a high level automatic isolation of turbines followed by a low level automatic reactor scram and primary containment isolation.

Following the initial oscillation, the operators conducted an isolation verification, a check of redundant level indication and a survey to determine any loss of coolant inventory. A check was also made of the drywell and coolant temperatures. The 0-400" shutdown wide range level instrument showed no oscillation and the survey produced no indication of any loss of coolant from the reactor. The drywell temperature at the highest elevation was 240°F and the coolant temperature was 220°F. It was concluded that the actual reactor water level was normal at the time of the initial instrument oscillation. There was no impact on the general public or plant employees as a result of this event. There were no pipe breaks or radioactive releases associated with the sensed level indications and the automatic safety features functioned as required.

Cause or Causes - The root cause of the three events described above is attributed to serious deficiencies in management controls of licensed activities.

For the first event, a series of major deficiencies in management controls resulted in a protracted failure of the Pilgrim facility to comply with the provisions of 10 CFR 50.44. When 10 CFR 50.44 became effective, the containment atmosphere control system actually installed at Pilgrim Station did not meet all of the regulatory requirements. This condition existed due to management's failure to conduct a proper design review of the capabilities of the existing atmosphere control system. However, the licensee erroneously informed the NRC in a letter dated October 19, 1979 that the existing installed equipment in Pilgrim Unit 1 was in full compliance with the requirements of 10 CFR 50.44. However, apparently as a result of an October 30, 1979 NRC letter requesting details of Pilgrim's compliance with 10 CFR 50.44, the

licensee took steps to design and install a modification to the system which would bring Pilgrim into compliance. This modification was installed during the May 1980 outage; however, because of a failure of management to initiate an essential procedural change, the modified system was not fully operational until June 5, 1981.

Prior to installation of the system modification, the failure of licensee management to properly determine system capabilities via a thorough design analysis of the installed system (as compared with the requirements of 10 CFR 50.44) led to the erroneous report to the NRC in October 1979. Further, when the licensee subsequently discovered in early 1980 that the installed system did not meet the requirements of 10 CFR 50.44, the licensee did not so inform the NRC and correct the apparent false statement made in the October 19, 1979 letter.

For the second event, the case involved a breakdown in the control of planned maintenance activities. There was a failure to properly review and control safety-related activities at the facility. The reduction in the level of safety was discovered and identified to the licensee's staff by the NRC resident inspector at the site.

For the third event, the problem of apparent erroneous level oscillations was determined to be caused by flashing of the level instrument reference legs at reduced reactor pressure because of the high drywell operating temperature (240°F) which was in excess of that specified in the FSAR (150°F). Drywell temperatures higher than this specified limit are attributed to ineffective drywell cooling due to a degraded condition of the drywell ventilation system (ducting, coolers, cooling water). The high drywell temperatures and degraded condition of the cooling systems had been observed by Pilgrim station operating personnel on many previous occasions and are considered to have been allowed to continue as a result of inadequate preventive maintenance and management controls in this area.

Actions Taken To Prevent Recurrence

Licensee - For the first event, the licensee restored the system to its original design and initiated an investigation to determine the cause of the unauthorized maintenance. Also, a procedural revision was made to permit effective remote operation of the system. The plans for long term corrective action on the part of Boston Edison as required by the NRC had not been submitted at the time of the writing of this report, since the time allowed for licensee response had not elapsed.

For the second event, when the NRC Resident Inspector discovered the deficiency and notified the licensee, the licensee restored the partially disabled containment isolation control logic electrical circuits to a fully operable condition.

For the third event, corrective maintenance was initiated on the drywell cooling systems to restore the original design capacity during the refueling outage which began on September 26, 1981. Drywell equipment insulation is being repaired and additional instrumentation is being installed to monitor the drywell temperature and performance of the cooling systems. At the request of the NRC, the licensee has proposed Technical Specifications limiting drywell temperatures. In addition, the licensee is conducting special inspections, tests, and evaluations for possible detrimental effects on safety-related equipment subjected to this sustained abnormally high temperature environment. To date, certain instrument limit switches and electrical cable were found to be affected and are being replaced.

NRC - Based on the first two events, and previous deficiencies in regulatory performance, the NRC concluded that continued operation of the plant over

the long term required significant changes in the control of licensed activities. As a result, the NRC issued an Order Modifying License Effective Immediately on January 18, 1982 requiring Boston Edison Company to develop and submit for NRC review and approval a comprehensive plan of action that will yield an independent appraisal of site and corporate management controls and oversight, and a review of previous safety-related activities to evaluate compliance with NRC requirements. Concurrent with the Order, the NRC issued a Notice of Violation and Proposed Imposition of Civil Penalties in the amount of \$550,000.

For the third event, the NRC has conducted inspections and is reviewing this event and the progress of the licensee's corrective actions. An NRC meeting was held on December 18, 1981 where licensee representatives described their plans and schedules for resolution of this major problem. At this meeting, the licensee was directed to propose Technical Specifications limiting drywell temperatures and provide a safety evaluation which describes the basis for operations with drywell temperatures exceeding maximum design values. This information was supplied to the NRC and is being reviewed. This event was included in a citation for violations in a letter from Region I to the licensee dated February 4, 1982.

Future reports on the findings and investigations will be made, as appropriate, in the quarterly Report to Congress on Abnormal Occurrences (NUREG-0900 series.)

Dated at Washington, D.C. this day of 1982.

Samuel J. Chilk
Secretary of the Commission

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

IN RESPONSE, PLEASE
REFER TO: M820729C

August 6, 1982

See item V



OFFICE OF THE
SECRETARY

MEMORANDUM FOR: Leonard Bickwit, Jr., General Counsel
William J. Dircks, Executive Director
for Operations
FROM: John C. Hoyle, Acting Secretary
SUBJECT: STAFF REQUIREMENTS - AFFIRMATION/DISCUSSION
SESSION, 3:30 P.M., THURSDAY, JULY 29, 1982,
COMMISSIONERS' CONFERENCE ROOM, D.C. OFFICE
(OPEN TO PUBLIC ATTENDANCE)

I. SECY-82-28A - Diablo Canyon Physical Security - Governor Brown's Request for Public Disclosure of Non-Protected Information

The Commission, by a vote of 5-0,* approved an Order responding to an October 13, 1981 motion filed by Governor Brown requesting that those parts of ALAB-653 and his Petition for Review which do not contain "protected information" be made public.

The Order announced that the Commission was releasing a sanitized version of both documents.

Additionally, the Commission (with Commissioner Gilinsky disapproving) agreed with staff memoranda dated July 23, 1982 and July 28, 1982 indicating certain additional portions of ALAB-653 that it believed should be withheld.

(Subsequently, on July 30 the Order was signed by the Acting Secretary.)

II. SECY-82-28B - Diablo Canyon Physical Security - Purging of Classified Material in ALAB-653

The Commission, by a vote of 5-0,* approved an Order directing all parties to the Diablo Canyon Physical Security Proceeding to return all copies of ALAB-653 until the Commission determines what action to take with regard to classified national security information contained in the decision.

~~82-2774650~~

The Order also makes available to the parties a copy of the decision with the classified material deleted so that they may comment on whether expunction of the classified material would prejudice them.

The Commission also approved issuance of a staff requirements memorandum directing the staff to brief all persons who had access to the classified material in the Diablo Canyon proceeding on the implications and responsibilities of having had such access.

(Subsequently, on July 29, the Order and staff requirements memorandum were signed by the Secretary.)

III. SECY-82-28C - Request in Shoreham Operating License Proceeding for Access to ALAB-653 (Diablo Canyon Physical Security)

The Commission, by a vote of 4-1** (Commissioner Gilinsky disapproving), approved an Order responding to a request by the applicant and Suffolk County in the Shoreham proceeding for access to certain portions of ALAB-653 (Diablo Canyon Physical Security) and the record supporting it.

The Order conditionally grants access to a sanitized version of the ALAB decision but denies access to the underlying record. The Order also directs the Licensing Board to consider a Suffolk County request that its consultants also be given access, and to grant the request only if the county demonstrates that such access is needed.

(Subsequently, on July 30, the Order was signed by the Acting Secretary.)

IV. SECY-82-266 - Review of ALAB-670 (In the Matter of Consumers Power Company)

The Commission, by a vote of 5-0,* approved an Order vacating as moot ALAB-670 and the underlying Licensing Board decision, LBP-81-26.

The Commission (with Commissioner Gilinsky disapproving) agreed to modify the Order to indicate that the decisions also should not be used for guidance.

(Subsequently, on July 30, the Order was signed by the Acting Secretary.)

V. SECY-82-286 - Proposed Rulemaking Concerning Staff at Nuclear Power Plants

The Commission, by a vote of 4-1*** (Commissioner Roberts disapproving), approved for publication a proposal addressing requirements for the minimum number of both senior operators and other operators on shift at all times at nuclear power units and requires the presence of a person with a senior operator license at all times in the control room of an operating plant. Commissioner Roberts preferred a version of the rule which set requirements for senior operators only. The Commission also agreed that the table on page 9 of the proposed rule (Version 2, Enclosure A to SECY-82-286) should be titled "Minimum Requirements Per Shift for Onsite Staffing of Nuclear Power Units By"

In response to a request from Commissioner Asselstine you should add the following statement to page 5 (prior to the Regulatory Flexibility Act Certification):

"Commissioner Asselstine would particularly appreciate comments on whether the implementation schedule contained in the proposed rule is realistic and workable."

The Commission requested that:

1. The proposed rule be published in the Federal Register allowing 30 days for public comment.
(EDO) (SECY Suspense: 8/23/82)
2. Absent objections from Commissioners and provided that no significant adverse comments or significant questions have been received and no substantial changes in the text of the rule are indicated, the Executive Director for Operations arrange for publication of the amendment in final form. Additionally any comments in respect to added Commission views should be referred to them. If significant questions have been received or substantial changes in the text of the rule are indicated, the revised amendment will be submitted to the Commission for approval.
(EDO) (SECY Suspense: 10/30/82)
3. Copies of the proposed rule be distributed to applicants, licensees, and other interested persons.
(ADM/EDO) (SECY Suspense: 9/1/82)
4. The appropriate Congressional committees be informed.
(OCA/EDO) (SECY Suspense: 9/1/82)

5. The Office of Public Affairs issue a public announcement.
(OPA/EDO) (SECY Suspense: 8/23/82)

In addition the Commission requested that in the future, you include in SECY papers any recommendations of the CRGR.

- VI. SECY-82-303 - Petition of Massachusetts Attorney General to Intervene in Proceeding for Modification of Pilgrim Station Operating License

The Commission, by a vote of 4-1** (Commissioner Gilinsky disapproving), approved an Order that denies a petition by the Massachusetts Attorney General to intervene in a proceeding for modification of the Pilgrim Operating License.

cc: Chairman Palladino
Commissioner Gilinsky
Commissioner Ahearne
Commissioner Roberts
Commissioner Asselstine
Commission Staff Offices
PDR - Advance
DCS - 016 Phillips

* Section 201 of the Energy Reorganization Act, 42 U.S.C. § 5841, provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioner Gilinsky was not present when this item was affirmed, but had previously indicated that he would approve. Had Commissioner Gilinsky been present, he would have affirmed his prior vote. Accordingly, the formal vote of the Commission was 4-0 in favor of the decision.

** Section 201 of the Energy Reorganization Act, 42 U.S.C. § 5841, provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioner Gilinsky was not present when this item was affirmed, but had previously indicated that he would disapprove. Had Commissioner Gilinsky been present, he would have affirmed his prior vote. Accordingly, the formal vote of the Commission was 4-0 in favor of the decision.

*** Section 201 of the Energy Reorganization Act, 42 U.S.C. § 5841, provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioner Gilinsky was not present when this item was affirmed, but had previously indicated that he would approve. Had Commissioner Gilinsky been present, he would have affirmed his prior vote. Accordingly, the formal vote of the Commission was 3-1 in favor of the decision.