

Mr. David A. Lochbaum  
Union of Concerned Scientists  
1616 P Street, N.W.  
Suite 310  
Washington, D.C. 20036

February 3, 1997

Dear Mr. Lochbaum:

I am responding to your letter to Chairman Jackson dated November 19, 1996, regarding the Independent Safety Assessment (ISA) of Maine Yankee Atomic Power Company (MYAPCo). In your letter, you identified three ISA findings related to emergency diesel generator (EDG) loading, component cooling water (CCW) system and cffsite power sources, that you felt required prompt resolution. You also expressed concern about the potential for unresolved items with safety significance in the MYAPCo backlog and noted that the ISA team did not address the safety implications of past operation of Maine Yankee Atomic Power Station (MYAPS) at power levels above 2,440 Megawatts-thermal (Mwt).

The staff's response to the specific issues you identified in your letter as requiring prompt resolution is contained in the enclosure. Our Project Manager, Mr. Dan Dorman (301-415-1429), will keep you apprised of the status of ongoing activities discussed in the enclosure.

In your conclusion, you noted that substantive corrective measures by both the utility and the NRC are essential. The licensee provided its response to the ISA team report on December 10, 1996. The NRC staff is reviewing that response. In a Commission briefing at NRC headquarters scheduled for February 4, 1997, both MYAPCo and the NRC staff will discuss their respective actions resulting from the ISA. I understand that you have requested, and the Commission has approved your request, to speak at that meeting. Additionally we have received your letter of January 2, 1997; the NRC will consider your comments during our review of the licensee's December 10, 1996 response.

Thank you for sharing your insights and concerns.

Sincerely,  
Original signed by  
Frank J. Miraglia

Frank J. Miraglia, Jr., Acting Director  
Office of Nuclear Reactor Regulation

Enclosure: As stated

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

February 3, 1997

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1616 P Street, N.W.  
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Thank you for sharing your insights and concerns.

Sincerely,

A handwritten signature in cursive script, reading "Frank J. Miraglia, Jr.", is written over the typed name.

Frank J. Miraglia, Jr., Acting Director  
Office of Nuclear Reactor Regulation

Enclosure: As stated

## Response to Issues Regarding Safe Operation at 2440 MWt

### Issue 1

You state in your letter, "Three of the ISAT's findings, involving emergency diesel generator loading, offsite power sources, and component cooling water capability, challenge safe operation of Maine Yankee even at its presently authorized power level. It is imperative that these technical issues be promptly resolved." The staff has referenced the three issues you raised to the appropriate sections of the ISAT report, and provided additional information regarding your concerns.

### Issue 1a: Section 2.3.5 - Emergency Diesel Generator Electrical Loading; and Section 3.2.4 - Testing Weaknesses

#### Response 1a

The ISA team noted MYAPCo's failure to calibrate the Emergency Diesel Generator (EDG) room exhaust fan thermostats. The team noted that if ambient air temperature exceeded 90 °F, combined with jacket cooling water temperatures above 190 °F, a derating of the electrical output of the EDG would be required. The team stated that the thermostat calibration could potentially affect the maximum EDG room ambient temperature and, therefore, the need to derate the EDG.

Following the ISA team findings and prior to the September 2, 1996, startup of Maine Yankee, the licensee calibrated the EDG room exhaust fan thermostats. In addition, as-found thermostat settings from monthly functional tests indicated that the thermostats were within their required calibration. The U.S. Nuclear Regulatory Commission (NRC) reviewed the calibration and documented the results in NRC Inspection Report No. 50-309/96-09, dated November 20, 1996. As a result of the calibration of the thermostats, the concern with elevated ambient temperatures and the ability to supply all required loads under design basis conditions has been addressed by the licensee.

As to the loading of the EDGs, the post LOCA loads at Maine Yankee are calculated to be 2842 KW. These loads are applied to EDGs with the following ratings: 2597 KW continuous duty, 2850 KW for 2000 hours, 2950 KW for 168 hours, and 3050 KW for 30 minutes.

The EDGs at Maine Yankee are capable of accepting post LOCA loads for the following reasons:

- (1) After one hour into the accident, per licensee procedures the load of 2842 KW will be reduced by several hundred kilowatts to below both the 2000 hour and continuous duty ratings of the EDGs.

Enclosure

(2) The calculated loads include approximately 100 KW for runout on the Low Pressure Safety Injection and Emergency Feedwater pumps. A full runout condition is a conservative assumption.

(3) The loads were calculated using name plate data. These data are typically conservative, that is, the actual loads are generally lower.

The staff concluded that the existing margins, although reduced, were sufficient for continued operation of the facility. The licensee is developing a design and operating margin review program to identify existing margins on important issues. The NRC staff will closely monitor these activities.

Issue 1b: Section 2.2.2 - Service Water/Component Cooling Water

Response 1b

The ISA team noted that the licensee tested the heat exchanger bypass valves after the team left the site and reported that the test successfully demonstrated the operation of this valve. As a result of the ISA team's questions, the licensee developed and implemented special test procedures for testing the CCW flow control valves, i.e., the heat exchanger inlet and bypass valves. The NRC reviewed the results of these tests and documented the results in NRC Inspection Report No. 50-309/96-09, dated November 20, 1996.

The ISA team concluded that the licensee had not demonstrated that CCW "would perform adequately under design-basis conditions originating from a power level of 2,700 MWt." This issue must be resolved before operation at higher power levels will be considered by the staff.

As noted in the transmittal letter for Inspection Report No. 50-309/96-09, the NRC staff is considering whether enforcement action is warranted in response to the failure of MYAPCo to (1) maintain calibration of the EDG room exhaust fan thermostats and (2) properly demonstrate the functionality of the CCW flow control valves. These apparent violations are being considered with those identified in the areas of equipment environmental qualification and safety system logic testing identified in NRC Inspection Report Nos. 50-309/96-10 and 50-309/96-11, respectively. The licensee's corrective actions to ensure that adequate maintenance and testing are performed will be reviewed by the staff.

Issue 1c: Section 2.3.1 - 115 kV Offsite Power Lines

Response 1c

The ISA noted that one of the two 115 kV offsite power sources for Maine Yankee was not independently capable of supplying the plant auxiliary power system under certain conditions, in apparent conflict with the facility's Final Safety Analysis Report (FSAR). Specifically, a voltage study conducted by Central Maine Power in 1995 indicated that the Suroweic line (Section 69) was inadequate for the start of a motor-driven feedwater pump (MDFWP). The study indicated that Suroweic line voltage would not recover (after a fast

transfer with a safety injection actuation signal and MDFWP auto-start) within the allotted 5-second reset time interval of the degraded grid undervoltage relay to prevent offsite power from being disconnected and resulting in the automatic start and loading of the EDGs.

In a telephone conference call on January 30, 1997, the licensee committed to propose an amendment to Technical Specification (TS) 3.12 to require that both 115 kV offsite power sources be operable when the reactor is critical. The staff addressed this issue in Supplement 1 to Confirmatory Action Letter (CAL) No. 1-96-015 dated January 30, 1997. Under the terms of the CAL Supplement, the licensee will not restart the facility until such an amended TS has been approved by the NRC staff.

You asked about the modeling of the offsite power system in the licensee's Individual Plant Examination (IPE). The licensee informed the staff in a letter dated December 12, 1996, that the IPE modeled offsite power (both the 115 kV and 345 kV sources) as a single unit. The licensee stated, however, that it was revisiting the need to enhance its IPE model regarding offsite power.

#### Issue 2

You state in your letter, "The ISAT determined that the root causes for the problems were attributable to economic pressure to contain costs and the lack of a questioning attitude by the utility staff. The ISAT reported a backlog of several thousand unresolved items. There may be unresolved items with safety significance in this backlog, but the ISAT report indicates that Maine Yankee may lack the resources to properly manage this backlog."

#### Response 2

Maine Yankee relies on the various licensee safety assessment processes that are employed to determine the relative safety significance of a potential problem and the assignment of a priority to resolve the identified concern. The NRC requires that processes are to be used for the identification of safety significant matters and to aid in focusing timely corrective actions on those matters based on their safety significance. Some of the processes used by the licensee for this purpose include: the Unusual Occurrence Report, Operability Determinations, the assessments performed by the onsite and offsite safety review committees, design basis screens, Technical Evaluation Reports, and Self-assessments (such as the Service Water Operational Performance Inspection - or SWOPI).

Separately, the NRC conducts ongoing reviews of issues that are identified (e.g., resident inspectors may review certain issues that they identify as a result of routine daily plant monitoring, or headquarters or regional specialists may evaluate identified events and problems), which then receive attention based upon the safety significance of the issue. Recent NRC monitoring of facility operations, including issues identified by the above enumerated MYAPCo processes, have resulted in NRC involvement in assuring that issues are receiving proper attention and will be listed as backlog work items only with proper assessment of the item's safety significance.



During the NRC's review of the corrective action process in 1995 (NRC inspection 50-309/95-09), it was noted that opportunities existed for improvement. As a result, Maine Yankee initiated re-engineering in this program area. In the interim, while this effort was being completed, Maine Yankee committed to the implementation of an interim prioritization process to direct increased attention on those issues of highest safety significance. Additionally, the ISA team noted that, in response to self-identified concerns, Maine Yankee had developed an integrated corrective action program, the Learning Process Improvement Program, for which Maine Yankee was developing the implementing procedures and necessary training. The licensee implemented this system in early January 1997. Further, the licensee in its December 10, 1996, response to the ISAT report states, "Maine Yankee is also taking steps to improve material condition, such as issuing guidelines for identification of material condition problems and establishing teams to reduce maintenance backlogs to minimal levels." A preliminary review of the effectiveness of these activities will be conducted by the NRC staff in February 1997.

As to economic pressures and the lack of a questioning attitude, the licensee has responded to these concerns in its letter of December 10, 1996. The staff is evaluating the licensee's submittal, including consideration of the comments you provided in your letter of January 2, 1997, and continues to closely observe Maine Yankee activities to assess concerns which could arise due to economic pressures or a lack of a questioning attitude. The staff is evaluating these concerns in the context of the most recent shut down as a result of cable separation issues. These are important concerns to which the staff has a heightened sensitivity for this facility.

### Issue 3

You state in your letter, "The ISAT determined that several design bases issues prevented the team from justifying safe operation of the plant above the originally licensed power level of 2,440 MWt, yet the team did not address the safety implications from Maine Yankee routinely operating above this power level since June of 1978. These issues represent the very real potential that Maine Yankee would have been unable to mitigate an accident without incurring significant adverse public safety consequences."

### Response 3

The ISA team identified several issues that prevented them from concluding that certain systems could perform their intended safety functions at power levels above 2,440 MWt. You noted that the team did not address the safety implications of past routine operation of Maine Yankee above that level.

For identified problems, the team concluded that the design-basis and compensatory measures adequately supported plant operation at a power level of 2,440 MWt. However, for two issues, the team could not conclude, and the licensee did not demonstrate, that the design-basis supported operation at 2,700 MWt. The licensee has significant work remaining to determine the safety implications of operation of Maine Yankee at power levels above

2,440 MWt. In addition to these matters, the staff is reevaluating the previously approved power uprates and will address the safety significance of such past operation and take appropriate actions, including enforcement action if warranted.

EDO Principal Correspondence Control

FROM: DUE: 12/23/96

EDO CONTROL: G960902  
DOC DT: 11/19/96  
FINAL REPLY:

David A. Lockbaum  
Union of Concerned Scientist

TO:

Chairman Jackson

FOR SIGNATURE OF : \*\* PRI \*\*

CRC NO: 96-1168

Miraglia

DESC:

ROUTING:

COMMENTS ON THE INDEPENDENT SAFETY ASSESSMENT OF  
MAINE YANKEE ATOMIC POWER COMPANY

Taylor  
Milhoan  
Thompson  
Blaha  
Miller, RI  
Jordan, AEOD

DATE: 12/02/96

ASSIGNED TO: CONTACT:

NRR

Miraglia

SPECIAL INSTRUCTIONS OR REMARKS:

Put EDO and Chairman on for concurrence.  
Chairman's office to review response prior  
to dispatch.

NRR RECEIVED: December 9, 1996  
NRR ACTION: DRPE:VARGA

NRR ROUTING: MIRAGLIA  
THADANI  
ZIMMERMAN  
SHERON  
MARTIN  
TRAVERS  
BOHRER

<u>ACTION</u>
DUE TO NRR DIRECTOR'S OFFICE
BY <u>Dec 19, '96</u>



OFFICE OF THE SECRETARY  
CORRESPONDENCE CONTROL TICKET

PAPER NUMBER: CRC-96-1168                      LOGGING DATE: Nov 19 96

ACTION OFFICE: EDO

AUTHOR: DAVID A LOCHBAUM  
AFFILIATION: DISTRICT OF COLUMBIA

ADDRESSEE: CHAIRMAN JACKSON

LETTER DATE: Nov 19 96                      FILE CODE: IDR-5 MAINE YANKEE

SUBJECT: COMMENTS ON THE INDEPENDENT SAFETY ASSESSMENT OF  
MAINE YANKEE'S ATOMIC POWER COMPANY

ACTION: Appropriate

DISTRIBUTION: CHAIRMAN, RF

SPECIAL HANDLING: NONE

CONSTITUENT:

NOTES:

DATE DUE:

SIGNATURE:                      DATE SIGNED:  
AFFILIATION: