

JAN 25 1988

The Honorable Gerry E. Studds  
United States House of Representatives  
Washington, D.C. 20515

Dear Congressman Studds:

This is in response to your letter dated November 23, 1987, concerning the Pilgrim Nuclear Power Station. The following information is provided on the matter of an alleged "core exposure incident" (taken here to mean partial core uncovering), raised in the letter from your constituent which was enclosed with your letter. Our review concludes that, although there were some fuel problems in the 1970's, these were associated with fuel design and fabrication technology and not due to any fuel uncovering during plant operation.

By early 1971, the Atomic Energy Commission was aware that as a result of fabrication and quality control problems at one of the vendor's fuel facilities, the General Electric (GE) Company supplied fuel to several reactor facilities, including Pilgrim, which contained fuel pellets with improper fuel enrichment. All of the fuel supplied to Pilgrim was returned to the GE facility for rework between August and November 1971. During that time, 2452 fuel rods were replaced. After the fuel was returned to Pilgrim, additional problems were identified which required that fourteen fuel rods from each of twelve fuel bundles be replaced. This work was done onsite and all prior to the initial loading of fuel into the Pilgrim reactor. Inspectors from the Atomic Energy Commission followed the fuel enrichment problems, including witnessing portions of the onsite fuel rod replacement, to ensure the issue was resolved prior to the Boston Edison Company (BECO) loading the fuel into the reactor between June 9-15, 1972.

The initial criticality at Pilgrim occurred on June 16, 1972. Following start-up testing, the facility was placed in commercial operation in December 1972. The facility then operated until its first refueling outage which occurred from December 28, 1973 through July 24, 1974. During this outage, BECO began replacing the original type of fuel bundles with those of a newer design. Twenty (out of 580) fuel bundles were replaced with newer type fuel bundles.

During late 1974, BECO noted a rise in the release from the fuel of airborne iodine and particulate fission products at Pilgrim. Reactor power level had to be reduced to maintain the gaseous effluent levels within the NRC License and Technical Specification requirements. The increase in gaseous effluents was subsequently determined to be due to cracks in the fuel cladding. These cracks were caused by hydriding, a recognized corrosion mechanism, and fuel pellet-clad interaction which allowed fission products to enter the reactor coolant system. Other facilities experienced similar "leaking fuel" problems with the older type fuel. It was intended that the newer type fuel bundle would resolve such fuel leakage problems.

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H PDR

As noted above, the reactor power level had to be reduced to maintain gaseous effluents within regulatory limits. Increased AEC/NRC inspection effort was spent to ensure the facility operated within these limits. This included several independent measurement inspections. In addition, refueling activities were observed during the 1974, 1976 and 1977 refueling outages. BECo completed the replacement of the older type fuel during the 1977 outage which resolved the problems.

Based on our onsite reviews conducted at the time and our recent review of records, including inspection reports, we conclude that the fission product releases at Pilgrim resulted from the cladding problems discussed above and that a "core exposure incident" has not occurred.

We remain willing to receive further information, or talk directly to the interested constituent in order to more fully appreciate his concern if you deem it appropriate.

I trust this letter has been responsive to your request.

Sincerely,

(Signed) T.A. Rehn

*for* Victor Stello, Jr.  
Executive Director  
for Operations

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

**ACTION**

EDO PRINCIPAL CORRESPONDENCE CONTROL  
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FROM:

REP. GERRY E. STUDDS

DUE: ~~01/07/88~~  
1-15-88

EDO CONTROL: 003376

DOC DT: 11/23/87

FINAL REPLY:

TO:

BRADBURN

FOR SIGNATURE OF:

\*\* GREEN \*\*

SECY NO: 1391

EXECUTIVE DIRECTOR

DESC:

ENCLOSES LETTER FROM CONSTITUENT RE POSSIBLE  
INCIDENT AT PILGRIM

ROUTING:

MURLEY  
MURRAY

DATE: 12/22/87

ASSIGNED TO: RI

CONTACT: RUSSELL

SPECIAL INSTRUCTIONS OR REMARKS:

OFFICE OF THE SECRETARY  
CORRESPONDENCE CONTROL TICKET

PAPER NUMBER: CRC-87-1391                      LOGGING DATE: Dec 4 87

ACTION OFFICE: EDO

AUTHOR: G.E. Studds  
AFFILIATION: U.S. HOUSE OF REPRESENTATIVES

LETTER DATE: Nov 23 87              FILE CODE: ID&R-5 Pilgrim

SUBJECT: Questions about a possible incident at the Pilgrim  
         plant

ACTION: Direct Reply

DISTRIBUTION: OCA to Ack, Docket

SPECIAL HANDLING: None

NOTES.

DATE DUE: Jan 4 88

SIGNATURE:                      DATE SIGNED:  
AFFILIATION:

Rec'd Off. EDO

Date 12-22-87  
Time 9 A

OFFICE OF THE SECRETARY  
CORRESPONDENCE CONTROL TICKET

U.S. NRC

PAPER NUMBER: CRC-87-1391      LOGGING DATE: Dec 4 87  
ACTION OFFICE: ~~of~~ EDO 1987 DEC -7 PM 2:58  
AUTHOR: G.E. Studds  
AFFILIATION: U.S. HOUSE OF REPRESENTATIVES  
LETTER DATE: Nov 23 87      FILE CODE: ID&R-5 Pilgrim  
SUBJECT: Questions about a possible incident at the Pilgrim plant  
ACTION: Direct Reply  
DISTRIBUTION: OCA to Ack, Docket  
SPECIAL HANDLING: None  
NOTES:  
DATE DUE: ~~Dec 18 87~~ Jan 4 88  
SIGNATURE:      DATE SIGNED:  
AFFILIATION:

*Hutch, should this go to the Staff?  
12-7-87 BJS*

→ *Roz + Ben -  
Recommend tech staff have  
first shot - refer direct  
to them in RI for reply to  
SEC 7... If any validity from  
tech side - they can refer to OI.  
Hutch*

Rec'd Off. EDO  
Date 12-22-87  
Time 9A

EDO --- 003376