Public Service Company of Colorado
P.O. BOX 840 · DENVER, COLORADO 80201
2420 W. 26th Avenue, Suite 100D, Denver, CO 80211

January 28, 1985
Fort St. Vrain
Unit No. 1
P-85029



Regional Administrator
Region IV
U. S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Attn: Mr. Eric H. Johnson

SUBJECT: Failure of Three CRDOAs to Scram

Dear Mr. Johnson:

During a telephone conversation between PSC and the NRC on January 22, 1985, Messrs. Ireland and Wagner requested additional information on the three control rod drive and orifice assemblies that failed to scram during in-core back-EMF testing at Fort St. Vrain.

Attached to this letter are two CRDOA work reports covering the period January 14-16, 1985 when the failures to scram occurred. These reports describe the elevations and movements of the rods at the time of failure to insert and the follow-on actions that were taken.

In addition to the attached work reports, you will shortly receive a Supplement to LER 84-008 and a back-EMF report which will provide further details of the event.

If you have any questions, please contact Mr. M. H. Holmes at (303) 571-8409.

Very truly yours,

M. H. Holmes

for H. L. Brey
Executive Staff Assistant
Electric Production

HLB/SLG:pa

Attachments



H005
RETURN ORIGINAL
TO RIV
1/1

INTER-DEPARTMENT MEMO - PUBLIC SERVICE COMPANY OF COLORADO

PPC-85-0221

DATE: January 15, 1985

TO: C. H. Fuller, Station Manager

FROM: Jim Eggebroten, Technical Services Engineering Supervisor

ATTN: Distribution

SUBJ: CRDOA WORK REPORT FOR 850114 (0730) THROUGH 850115 (0730)

All of the tool boxes and work stands have been assembled and are now being stored in the "Crystal Palace".

The Fuel Deck storage room was cleaned and organized.

Two spare control rods were brought to the fuel deck.

During in-core back-EMF testing two CRDOAs failed to scram.

CRDOA #36 in Region 28 was scrammed sucessfully during the first step of the test. The second step requires the control rods to be scrammed for 13 second intervals. The control rods scrammed from all positions except when it reached the 24.8" position. At this point it would not scram. The Reactor Operator withdrew the control rods up 10" and then initiated the scram from this new position. The control rods scrammed for the 13 second interval to the 18" position. Again the scram sequence was initiated from the 18" position to the full "in" position with no problems. The control rods were then fully retracted and scrammed from the full "out" position to the full "in" position. No problems were encountered during this scram.

CRDOA #17 in Region 31 was scrammed successfully during the first step of the test. While performing the 13 second scram intervals the control rods failed to scram from three different positions. Each time they did not scram the Reactor Operator withdrew the control rods 2" and then inserted them 2" in an attempt to free the mechanism. Each time this was done the control rods would scram. After the 13 second interval scrams the control rods were fully retracted. An attempt was made to scram from the full "out" position, but this was not successful. The Reactor Operator inserted the control rods two inches and then retracted them back to the full "out" position but not scrammed. The control rods were then left in the full "out" position and Technical Services was contacted. To avoid any further problems it was decided to drive the control rods to the full "in" position and monitor the motor wattage. Long periodic oscillations were observed, but no abnormal wattages were seen.

A review of the back-EMF tracings is currently being conducted. Throughout both events no over amperage trips or slack cable indications occurred. In addition, the position indicators for both Regions were fully operational.

If you have any questions, call me on extension 270.

Jim Eggebroten

Jim Eggebroten
Technical Services
Engineering Supervisor

JKE:dr

Distribution:

J. Gahm
F. Novachek
B. Franek
W. Craine
T. Borst
L. Bishard
G. Powers
D. Warembourg
M. Niehoff
R. Craun
L. Singleton
G. L. Plumlee

INTER-DEPARTMENT MEMO - PUBLIC SERVICE COMPANY OF COLORADO

PPC-85-0234

DATE: January 16, 1985

TO: C. H. Fuller, Station Manager

FROM: Jim Eggebroten, Technical Services Engineering Supervisor

ATTN: Distribution

SUBJ: CRDOA WORK REPORT FOR 850115 (0730) THROUGH 850116 (0730)

Maintenance assisted Health Physics with additional painting in the HSF. This consisted of painting some areas in the west pit. Health Physics is currently surveying the entire HSF to determine if any additional decontamination is required.

It was decided to remove some more fuel deck equipment to the turbine deck. This equipment had been stored in the northwest corner of the deck and consisted of contaminated ICRD components and storage casks.

The shim motor work stands that were made in the machine shop have been moved up to the fuel deck. These will enable the mechanics to work on the motors more efficiently.

The yellow storage cask, used for storage of contaminated shocks and clevis bolts, was moved from the fuel storage building to the fuel deck.

During in-core back-EMF testing another CRDOA failed to scram.

CRDOA #15 in Region 32 was scrammed successfully from full "out" to the full "in" position. During the 13 second scram intervals the rod failed to scram from the 107.8" position. This was the only position at which the rods did not scram. Technical Services was contacted at this point for assistance. The control rods were then manually driven in while the shim motor wattage was monitored. Nothing abnormal was observed.

If you have any questions, call me on extension 270.

Jim Eggebroten
Technical Services
Engineering Supervisor

JKE:dr

Distribution:

J. Gahm
F. Novachek
B. Franek
W. Craine
T. Borst
L. Bishard
G. Powers
D. Warembourg
M. Niehoff
R. Craun
L. Singleton
G. L. Plumlee