



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

April 11, 1980

Docket No. 50-213

LICENSEE: Connecticut Yankee Atomic Power Company (CYAPCO)
FACILITY: Haddam Neck Plant
SUBJECT: SUMMARY OF MARCH 28, 1980 MEETING REGARDING POTENTIAL CRACKS IN
HADDAM NECK LOW PRESSURE TURBINE DISCS AND BASES FOR CONTINUED
OPERATION

On March 28, 1980, a meeting was held to discuss various bases for continued operation of the Haddam Neck Plant in light of recent discoveries of cracks in several Westinghouse turbines and the results of an analysis of the Haddam Neck turbine which indicate that postulated crack sizes in low pressure discs could exceed limiting values under certain overspeed conditions. A telephone meeting was held between the NRC staff and CYAPCO on March 21, 1980, but the issue could not be resolved at that time so the licensee proposed a meeting in Bethesda for March 28, 1980. A list of attendees is attached.

The licensee presented three arguments in favor of continued operation.

1. Low moisture content of steam in the area of interest.

Measurements of conditions in the area of the LP turbine first stage disc indicated that hub temperatures are greater than saturation temperature for the steam flowing through the stage. The licensee measured actual steam quality and found only 0.5% moisture in the interstage region. He therefore concluded that favorable conditions did not exist for the promotion of stress corrosion cracking and that he should not have cause to fear excessive cracking. The staff position is that we do not know the causes of the cracking phenomena at this time, but the licensee should continue attempts to correlate known instances of cracking and known cases of turbines with no cracks with different environmental conditions in the turbine. If he can show conclusively that turbines similar to his, with similar operating environments, have experienced no cracking, then this would be a very strong argument for continued operation. The licensee intends to pursue this case with Westinghouse.

2. Low bore stresses.

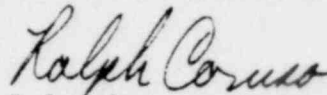
The licensee recalculated bore stresses and found slightly lower values, but these would not have a significant effect on the calculated crack sizes.

3. Conservative calculations of critical crack size.

The licensee proposed to do more detailed and sophisticated analyses of critical crack size to show that the postulated crack size is less than critical crack size. The NRC staff position is that further analysis of this type is not useful or conclusive, because preliminary indications do not indicate that a significant reduction in critical crack size will be developed.

The NRC staff indicated to the licensee that he should also consider proposals to limit the maximum overspeed which would occur if a turbine generator loss-of-load accident were to occur. The 128% overspeed condition produced the maximum stress in the turbine disc, and preliminary calculations indicate that if the overspeed transient could be limited to 120%, then the plant might be able to continue operation. The licensee agreed to study this option.

The licensee was reminded that our current position would allow him to operate for only one more week before requiring a turbine disc inspection and that he should submit the additional information and proposals quickly.



Ralph Caruso
Operating Reactors Branch #2
Division of Operating Reactors

Attachment:
List of Attendees

cc w/attachment:
See next page

cc w/attachment:

Day, Berry & Howard
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Connecticut Energy Agency
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Director, Technical Assessment
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ATTACHMENT

LIST OF ATTENDEES

NRC

M. Chiramal
H. Balukjian
R. Giardina
W. Hazelton
C. Sellers
R. Klecker
R. Caruso
W. Ross
D. Crutchfield
T. Wambach

CYAPCO

T. Murray
P. Austin
G. Drechsler
J. Levine

Westinghouse

J. Schmerling
K. Conrad

DISTRIBUTION FOR MEETING SUMMARIES

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Local PDR 50-213

H. Smith

TERA

SEPB Reading

NRR Reading

H. Denton

E. Case

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D. Eisenhut

R. Vollmer

W. Russell

B. Grimes

T. Carter

T. Ippolito

R. Reid

G. Knighton

V. Noonan

A. Schwencer

D. Ziemann

D. Crutchfield

G. Lainas

J. Scinto, OELD

OI&E (3)

ACRS (16)

Licensee - Mr. W. G. Coursil

NRC Participants

D. Knuth, KMC

R. Schaffstall, KMC

R. Silver

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