AFTER ISSUANCE OF OPERATING LICENSE

NRC FORM 195 (2-76)

U.S. NUCLEAR REGULATORY COMMISSION

DOCKET NUMBER 50-315

FILE NUMBER

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TO: Mr. Edson G. Case

FROM: Indiana & Michigan Power Co.
New York, N. Y. 10004
G. P. Maloney

DATE OF DOCUMENT 08/26/77

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DESCRIPTION: Advising of Licensee intent to supply steam for the initial test of the Unit 2 feed-pumpr turbine and the main turbine generator using steam from unit 1...and Trans The Following:

1p

ENCLOSURE: Consists of info regarding Unit 2 Turbine-Generator Initial Operation Using Steam From Unit 1 NSSS.

2p

ACKNOWLEDGED

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PLANT NAME: DONALD C COOK UNIT # 1

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FOR ACTION/INFORMATION

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P. O. BOX 18
BOWLING GREEN STATION
NEW YORK, N. Y. 10004

Regulatory File Cy.

August 26, 1977

Donald C. Cook Nuclear Plant Unit 1
Docket No. 50-315
DPR No. 58

Mr. Edson G. Case, Acting Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Case:

This is to advise you that it is our intent to supply steam for the initial test of the Unit 2 feedpump turbine and the main turbine generator using steam from the Donald C. Cook Nuclear Plant Unit 1. We are currently scheduling the Unit 2 feedpump turbine roll on September 19, 1977 and the main turbine roll on November 7, 1977.

Section 10 of our Final Safety Analysis Report describes the crosstie between the Unit 1 and Unit 2 steam supply systems to be used for this purpose. A description of our intended mode of operation is included in the attached document entitled, "Cook Nuclear Unit 2 Turbine-Generator Initial Operation Using Steam from Unit 1 NSSS."

We have reviewed the attached document with both Westinghouse Electric Corporation, the original NSSS supplier, and Exxon Nuclear Company, the Unit 1 reload fuel supplier. Both organizations advised us that our intended mode of operation is enveloped by the safety analyses which have been performed for the plant and hence does not constitute an unreviewed safety question regarding Unit 1 operation.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

In light of the above, we have concluded that our intended mode of operation is based upon systems described in the FSAR, does not constitute an unreviewed safety question, does not require a change to Technical Specifications, and will not adversely affect the health and safety of the public. Hence, it is our intent to proceed with testing of the feedpump turbine and the main turbine generator in accordance with the above mentioned schedule.

Very truly yours,

G. P. Maloney
Vice President

GPM:mam

Sworn and subscribed to before me
on this 26TH day of August 1977
in New York County, New York

Gregory M. Gurican
Notary Public

GREGORY M. GURICAN
Notary Public, State of New York
No. 31-4643431
Qualified in New York County
Commission Expires March 30, 1979

cc: R. C. Callen
P. W. Steketee
R. Walsh
G. Charnoff
D. V. Shaller - Bridgman
R. W. Jurgensen
K. R. Baker - Bridgman
R. J. Vollen

COOK NUCLEAR UNIT 2 TURBINE-GENERATOR INITIAL OPERATION USING STEAM FROM UNIT I NSSS

We are planning to make a series of test runs of the feed pump turbines (FPT) and the main turbine-generator of Cook Nuclear Unit 2 using steam from Cook Nuclear Unit 1. These test runs are to be made prior to the completion of Unit 2 NSSS; their purpose is to check out, dynamically balance the turbines if necessary, set the turbine controls, check generator excitation, check overspeed trips and run other pre-operational tests so that these machines will be ready for operation as soon as Unit 2 NSSS is completed and licensed for power operation.

During these test runs, each FPT will be run, one at a time, uncoupled from its feed-pump, to its rated speed of 5300 rpm and to its overspeed trip setting of 5670 rpm. Each feed-pump turbine will also be run, coupled to its feed pump, to approximately 5300 rpm. These tests on the FPT's are scheduled to be run during the weeks of September 19 and 26, 1977.

The main turbine-generator will be run to its rated speed of 1800 rpm but will not be loaded or electrically connected to the power system. The machine will also be run up to its overspeed trip setting of 2016 rpm. These test runs on the main turbine-generator are scheduled to be run during the weeks of November 7 and 14, 1977.

The steam from Unit 1 is to be supplied to Unit 2 through a temporary cross-tie pipe of 12" diameter which connects Unit 1 turbine by-pass header with Unit 2's main steam lead and turbine by-pass header.

The maximum steady state flow expected through the crosstie is approximately 30,000 lb/hr during the coupled FPT runs and approximately 925,000 lb/hr during the main turbine runs.* Momentary flow spikes above these flows may be needed in order to rapidly accelerate the main turbine through its critical speeds near 590, 800, 990 and 1600 rpm. It is not possible to predict the magnitude or duration of these flow spikes but they are not expected to exceed 75% of the steady state flow prior to the spike and their duration is not expected to exceed 2-minutes each.

*Unit 1 Main Steam flow at 100% power (3250 MW_t) is 14,206,000 lbs/hr.

The steam crosstie is equipped with a manually operated shut-off valve at both the Unit 1 and Unit 2 ends. A flow metering orifice of 8.536" is installed in the line.

In the event that Unit 2 turbine control valves open more than desired or there is a steam line break at the Unit 2 end of the crosstie, the maximum steam flow through the crosstie is calculated to be approximately 2.67×10^6 lb/hr at which point the flow is choked. This is based on a Unit 1 main steam pressure of 830 psia, saturated, corresponding to approximately 60% power, and does not take credit for the resistance of the flow metering orifice.

The entire main steam system piping of Unit 2 will be pressurized, through the crosstie, back to the Steam Generator Stop Valves which will be closed and remain closed during these test runs (i.e. Unit 2 Steam Generators will not be pressurized). Valves in the branch lines from Unit 2 main steam system to the reheaters, to the auxiliary steam system, and to the turbine steam seal system will be closed and remain closed during the test runs. All but 2 or 3 of the Unit 2 turbine by-pass valves will be kept closed and their block valves will be closed. The 2 or 3 valves which remain operational will be used, as needed, to regulate steam flow through the crosstie.

The 12 inch temporary crosstie between the Unit 1 turbine by-pass header (36 inches) and the Unit 2 turbine main steam lead (30 inches) is shown on FSAR Diagrams Figure 10.2-1A and 10.2-1B.

During this testing, power operation will be restricted to 60% or less. Condensate for return to the Unit 1 condenser hotwell will be supplied by either the normal Unit 1 make-up system or by pumping it back from the Unit 2 condenser.

The above testing operation was reviewed by Westinghouse Electric Corporation, the original NSSS supplier. Westinghouse found that the proposed mode of operation is acceptable and is bounded by the analyses of the Excessive Load Increase and Steamline Rupture Incidents presently included in the FSAR. Exxon Nuclear Company our reload fuel supplier, has also reviewed our intended mode of operation and has also concluded that the indicated operation is enveloped by the safety analyses which have been performed on the plant.