

JAN 29 1970

Saul Levine, Assistant Director for Reactor Technology, DRL
THRU: V. Moore, Chief, Instrumentation and Power Technology, DRL

ODP for

**MINUTES OF MEETING WITH CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.,
INDIAN POINT NUCLEAR GENERATING UNIT NO. 2, DOCKET NO. 50-247**

A meeting was held with Consolidated Edison Company (Con Ed) on January 16, 1970. The purpose of the meeting was to complete the review of the instrumentation and power systems' schematic diagrams. An attendance list is attached.

Details of the discussions are given below. Unresolved items, including those remaining from our previous meetings on December 10, and 30, 1969, are identified by an asterisk. We are continuing to discuss these items with Con Ed but no additional drawing review meetings are planned.

Offsite Power Systems

1. The fact that the Buchanan substation is not under the control of the Indian Point operators was discussed again. Con Ed clarified the FSAR explanation of the communication systems between the site and the West End Avenue office. We informed Con Ed that we are continuing our evaluation of the switchyard but require no additional information at this time.
2. Two additional gas turbines will be installed at the site in the switchyard. Con Ed explained how these will be arranged in the 13.8 kv system so that any of the three turbines will be able to supply power to Unit 2.
3. The automatic breaker operations upon unit trip were explained. The 13.8/6.9 kv power system is not capable of carrying the total plant auxiliary load. If the 138 kv line is unavailable, following a unit trip the larger loads (e.g., main coolant pumps, circulating water pumps) are tripped off and then power is automatically restored to buses 1-4 from the 13.8/6.9 kv source.

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Onsite Power Systems

1. The design of the d-c circuits which supply control power to the ESF switchgear will be changed. The four automatic bus transfer switches will be individually fused to prevent a single fault from tripping the two common d-c breakers which supply all four switches. The individual loads on each of the switches are also fused.
2. In response to our concerns regarding the design of the load shedding and SI sequence circuits, Con Ed stated the following:
 - a. Contacts of relays which are no longer used will be disconnected from the circuits.
 - b. Means will be provided to monitor the power supply availability to normally de-energized circuits.
 - c. Test procedures are not yet developed. A complete test of these circuits is not possible except during shutdown.
- *3. Although the two unit batteries are located in separate rooms, the ventilation system utilizes a single common exhaust fan. Con Ed is aware of our concern with this arrangement. We also questioned the use of florescent lighting fixtures in the battery rooms. Con Ed stated that because of low hydrogen generation and the design of the battery rooms, these fixtures are not a fire hazard.
- *4. We asked Con Ed to investigate the need for including under-voltage signals from bus 5 and 6 in the diesel generator breaker control circuits. Since the diesel generators do not supply power to these buses, we are concerned that the use of these UV signals could prevent all three diesel generator breakers from closing when they are needed. We pointed out that although we cannot now envision a fault that would cause this, failures of this type have occurred in similar designs.
5. The FSAR response to Question 7.6 was clarified. Two full capacity fans are provided to cool the cables in the tunnel.

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Engineered Safety Features

- *1. The BIT discharge valve arrangement will be modified to include an additional motor-operated valve. It appears that this change will preclude the loss of suction to all SI pumps from a single power failure.
- *2. Schematic diagrams of the BIT level instruments will be submitted when available. Con Ed stated that 2/3 logic will be used in the valve control circuits. We expect that this item and the previous item will be resolved when the diagrams are available.
- 3. The design of the instrument bus power supply is satisfactory. Instruments which require power to actuate a trip will be powered from sources which are not part of the load shedding sequence.
- *4. Further investigation of the Containment Spray System actuation circuits has revealed that:
 - a. Automatic actuation of the system is available only for a short time (approx. 40 seconds) following the start of the safety injection sequence; and
 - b. Manual actuation, using 2/2 switch logic, of the complete system is available only during this same short interval.

These conditions exist regardless of whether the SI master relays are reset by the operator. Westinghouse stated that since each component has a manual control switch the design is satisfactory. We informed Con Ed that we were concerned about the short time during which automatic actuation is available. With regard to the manual control circuits, no logical justification for the design was available. Con Ed will investigate both items.

- 5. Test procedures for continuity checks of the ESF relays are not available. Westinghouse stated that the FSAR may be misleading in that the tests check continuity of more than just the relay coils. We believe that the test description now provided in the FSAR is adequate.
- 6. With regard to environmental testing of ESF components, Con Ed stated the following:
 - a. WCAP-9003 will be referenced in the FSAR as it is applicable to the recirculation pump motors and the containment fan cooler motors.

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- b. WCAP-7354-L will be referenced in the FSAR as the information regarding the Foxboro transmitters is applicable to Indian Point 2. Con Ed considers WCAP-7354-L adequate as no Barton transmitters will be used. Additional test data on the Foxboro transmitters will be available in mid-1970.
- c. The Class B operators of motor-operated valves that are required to be operable during the recirculation phase will be replaced with Class H operators. Valves required to be operable only during the injection phase will retain the Class B operators. Documentation of testing will be provided.
- d. No environmental testing is being done on air-operated valves since, in all safety applications, they are designed to fail closed.
- e. FSAR pages Q 7.8-1 and 6.2-35 state different test conditions. The inconsistency will be resolved by an amendment.
- f. Containment sump level instruments will not be tested since they are designed for the accident environment, the design is very simple (floating stainless steel balls), and equivalent information is available from the RWST level instruments.
- g. The answer to Question 7.8 will be revised to include additional equipment.
- h. Page Q 7.9-1 states instrumentation and power cables have been tested. Con Ed states that results will be included in a FSAR amendment.
- i. It is recognized that Question 7.19 has not been answered and will be in a future amendment.
- j. Results of the seismic simulation tests on instrumentation and control equipment will be included in the FSAR in the near future.

Reactor Protection System

- 1. Alarms will be provided at the control board to annunciate entry to the reactor protection system cabinets. Each channel has an individual alarm. The response to Question 7.12 will be amended.

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2. The response to Question 7.1 indicated that the reactor trip on turbine trip and the turbine runback circuits meet IEEE 279. It was determined that these circuits do not meet IEEE 279 and that they need not meet it since they are anticipatory signals and are not required for reactor safety. The FSAR will be amended.
3. Westinghouse stated that WCAP-7306 (Systematic Failures) is applicable to Indian Point 2. Con Ed stated that the question concerning systematic failures and expected transients with failure to scram will be answered in the next amendment. WCAP-7306 will be referenced.
4. The cabinet inside containment which houses the pressurizer level and pressure transmitters is equipped with heaters. Westinghouse stated that these are used to obtain more accurate calibration of the instruments during physics testing. The heaters are not required during plant operation and would not affect the instruments if they failed on or off.
- *5. The response to Question 7.14 indicates that several manual adjustments of trip points must be made if operation on only three main coolant pumps is to be allowed. We informed Con Ed that we will have difficulty in accepting this procedure.

Original signed by
Olan D. Parr

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Instrumentation and Power
Technology Branch
Division of Reactor Licensing

[Signature]
R. D. Pollard
Instrumentation and Power
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Enclosure:
Attendees

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bcc: V. Moore
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Distribution:
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| SURNAME ▶ | R. C. DeYoung | | RPollard:ese | O. Parr | VMoore | |
| | K. Kniel | | | | | |
| DATE ▶ | AEC Attendees | | 1/29/70 | 1/29/70 | 1/29/70 | |

JAN 29 1970

INDIAN POINT 2 MEETING - JANUARY 16, 1970

ATTENDEES

W

A. A. Simmons
B. A. Nelson
H. N. Skow
O. M. Hauge
J. Locante
Dick Puryear
E. J. Staffel
V. V. Kirilloff

Con Ed

R. H. Koppe
F. G. Flugger
J. J. Blade
F. Fischer
P. Szabados

U.E. & C.

W. P. Robinson
J. G. Kritikson

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