UNITED STATES OF AMERICA

ATOMIC ENERGY COMMISSION

In the Matter of	)	
	)	
CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. (Indian Point Station, Unit No. 3)	)	Docket No. 50-286

AFF

AFFIDAVIT OF WILLIAM J. CAHILL, JR.

STATE OF NEW YORK)
) ss.:
COUNTY OF NEW YORK)

WILLIAM J. CAHILL, JR., being duly sworn, says:

1. I am a Vice President of the Consolidated Edison Company of New York, Inc. ("Consolidated Edison"), 4 Irving Place, New York, N. Y. 10003. I make this affidavit in support of Consolidated Edison's "Motion for Fuel Loading, Subcritical and Low Power Testing and Limited Operating License".

2. I have responsibility for nuclear licensing and quality assurance matters, and am familiar with the design, construction, and proposed operation of the Indian Point Unit No. 3 facility ("Indian Point 3").

3. Construction of Indian Point 3 has proceeded and will be completed in conformity with Provisional Construction Permit No. CPPR-62, the application as amended, the provisions of the Act, and the rules and regulations of the Atomic Energy

EXHIBIT A

Commission ("Commission"). As of July 1, 1974, construction of the facility was 92% complete. It is estimated that the facility will be ready for fuel loading in November 1974.

4. The activities for which authorization is sought consist of testing and calibrating plant equipment starting with fuel loading and progressing in discrete steps to the authorized power level and operation at 91% of rated power until May 1, 1976. The provisional schedule for these activities is attached hereto as Table I. This schedule is based upon guidance provided by Consolidated Edison's contractor. In the event the schedule changes, the Commission will be advised of the new dates. The schedule calls for approximately four weeks for fuel loading, three weeks for subcritical testing, two weeks for testing at up to 10% of rated power, four weeks for testing at up to 50% of rated power, and an additional seven weeks for testing at up to 91% of rated power. Not counting intervals between steps in the testing program, approximately twenty-two weeks would be required to complete the program.

5. A detailed description of each phase of the testing program follows:

a. Fuel Loading and Subcritical Testing

These activities will consist of the following:

(1) Loading fuel into the reactor vessel;

(2) Closing the reactor vessel and establishing temperature and pressure in the reactor coolant system by operating the reactor coolant pumps;

(3) Testing and calibrating instrumentation in the core and the reactor coolant system, and

(4) Performing tests on the control rods and control rod drives.

Throughout these activities, the reactor will be maintained in a subcritical condition by a large margin. Since the fuel has not been irradiated, there is no production of fission products or other radioactivity.

All systems and all work inside the containment, all systems outside containment but connected directly to the reactor coolant system, and all engineered safety systems including the diesels will, with the exception of minor non-safety-related items, be completed prior to the commencement of these activities.

b. Initial Criticality

Initial criticality is established by sequentially withdrawing the shutdown and control rod assembly groups from the core leaving the last withdrawn control bank inserted far enough into the core to provide effective control when criticality is achieved, and then slowly and continuously diluting the heavily borated reactor coolant until the chain reaction is self-sustaining.

Successive stages of control rod assembly group withdrawal and boron concentration reduction are monitored as functions of control rod assembly group position and, subsequently, of primary water addition to the reactor coolant system during dilution, by observing changes in the neutron count rate as indicated by the source range nuclear instrumentation channels.

The inverse count rate is used as an indication of the proximity and the rate of approach to criticality of the core during control rod assembly group withdrawal and during reactor coolant boron dilution. The rate of approach to criticality is reduced as the reactor

approaches the extrapolated criticality point to ensure that effective control is maintained at all times.

Relevant procedures specify alignment of fluid systems to allow controlled start, stop and adjustment of the rate at which the approach to criticality can proceed, indicate values of core conditions under which criticality is expected, specify allowed deviations in expected values and identify chains of responsibility and authority during reactor operations.

c. Low-Power Testing (Up to 10% of Rated Power)

Upon achievement of criticality, a prescribed program of reactor physics measurements is undertaken to verify that the basic static and kinetic characteristics of the core are as expected and that the values of kinetics coefficients assumed in the safeguards analysis are in fact conservative.

Measurements made at lowpower (up to 10% of rated power) include verification of calculated values of control rod assembly groups and unit reactivity

worths, isothermal temperature coefficients under various core conditions, and critical boron concentrations as a function of control rod assembly group configuration. Preliminary checks on relative power distribution are made in normal and abnormal control rod assembly group configurations.

Concurrent tests are conducted on plant instrumentation including the source and intermediate range nuclear channels. Control rod assembly group operation and the behavior of the associated control and indication circuits are demonstrated.

Detailed procedures specify the sequence of tests and measurements to be conducted and the conditions under which each is to be performed to ensure the relevancy and consistency of the results obtained. These tests will cover a series of prescribed control rod configurations with intervening measurements of differential control rod worths during boron dilution or boron injection.

d. Power Level Escalation

When the operating characteristics of the reactor and unit are verified by the low power tests (up to 10% of rated power), a program of power level escalation in successive stages brings the unit to its maximum allowed power level. Both reactor and unit operational characteristics are closely examined and the relevance of the safeguards analysis verified at each stage before escalation to the next programmed level is effected.

Reactor physics measurements are made to determine the magnitudes of (1) reactivity effects; (2) control rod assembly differential reactivity effects; (3) control rod assembly group differential reactivity worth; and (4) relative power distribution in the core as functions of power level and control rod assembly group position.

Secondary system heat balances ensure that the several indications of power level are consistent and provide bases for calibration of the power range nuclear instrumentation channels. The

ability of the Reactor Control and Protection System to respond effectively to signals from primary and secondary instrumentation under a variety of conditions encountered in normal operations is verified.

At prescribed power levels, the response characteristics of the reactor coolant and steam systems to dynamic stimuli are evaluated. The responses of system components are measured for 10% reduction of load and recovery, 50% reduction of load and recovery, turbine trip, and trip of a single control rod assembly.

Adequacy of radiation shielding is verified by gamma and neutron radiation surveys inside the containment and throughout the facility.

The sequence of tests, measurements and intervening operations is prescribed in the power escalation procedures together with specific details relating to the conduct of these activities. The measurement and test operations during power escalation are similar to normal operations.

In order to monitor performance, the analytical results listed in Section 13.3.3 of the Indian Point 3 Final Facility Description and Safety Analysis Report (FSAR) must be on hand before power escalation is undertaken. Other conditions that must be met before commencement of the Power Escalation Test Program are identified in Section 13.3.3 of the Indian Point 3 FSAR.

6. Table 2 lists those principal tests planned under the various power level authorizations sought. See Table 13.3-1, Indian Point 3 FSAR, for further details on these tests.

7. The Amended and Substituted Application for Licenses, filed April 16, 1973, as amended, is in accordance with the requirements of the Atomic Energy Act of 1954, as amended ("Act"), and the regulations of the Commission, as set forth in 10 CFR Chapter 1. Indian Point 3 will be operated in conformity with the application as amended, the provisions of the Act, and the rules and regulations of the Commission.

8. There is reasonable assurance (a) that the proposed activities requested under the authorization of a limited operating license can be conducted without endangering the health and safety of the public; (b) that the impact of such activities on the aquatic ecosystem of the Hudson River will

be negligible; and (c) that such activities will be conducted in compliance with the regulations of the Commission set forth in 10 CFR Chapter 1.

9. Consolidated Edison's technical qualifications to conduct these activities are chiefly a result of its involvement in the design, construction, and Commission review of all three units at the Indian Point site, and its experience in commercial operation of Indian Point 1 for a period of more than ten years and Indian Point 2 for the past year. The Company has applied a policy of employing individuals with special training and experience in the nuclear field, and is also able to draw on the skills and experience of its consultants and contractors assisting in the design and construction of both Indian Point 2 and 3.

Consolidated Edison acted as the equivalent of a general contractor for the construction of Indian Point 1 and monitored construction activities at Indian Point 2 and 3, and was found by the Commission in Dockets No. 50-3 and 50-247 to be technically qualified to operate utilization facilities similar in many respects to Indian Point 3. The Company has safely operated Indian Point 1 for over ten years and has generated more than 11,000,000 megawatt hours of electricity since initial criticality in August 1962. More than 1,000,000 megawatt hours of electricity have been safely generated by

Indian Point 2 since operation began last year. Many of Consolidated Edison's officers and employees, in several departments, have become familiar with and experienced in the safety and engineering aspects of the operation of a nuclear facility through their involvement in and review of the operation of Indian Point 1 and 2.

10. The proposed activities for which authorization is requested will be conducted within the jurisdiction of the Commission. Consolidated Edison is incorporated in the State of New York, and its main office address is 4 Irving Place, New York, New York 10003. It is not owned, controlled or dominated by an alien, a foreign corporation, or a foreign government. All of its trustees and principal officers are citizens of the United States.

The activities to be conducted are not expected to involve any restricted data. However, any such data will be safeguarded in accordance with the Commission's regulations.

Fuel will be obtained as needed from sources of supply available for civilian purposes. Compliance with the applicable Commission's regulations in 10 CFR Part 70 and the Company's Physical Security Plan provides reasonable assurance against the diversion of special nuclear material for military purposes.

For these reasons, the activities to be performed will not be inimical to the common defense and security.

11. In accordance with the Commission's regulations in 10 CFR Part 140, Consolidated Edison will during the pre-operational storage period have and maintain financial protection and execute an indemnity agreement with the Commission.

The Company has previously furnished to the Commission proof of financial protection in the amount of $110,000,000 in the form of Nuclear Energy Liability Insurance Association Policy No. NF-100 and a Mutual Atomic Energy Liability Underwriters Policy No. MF-29, to cover operations of Indian Point 1 and 2. These policies will be amended to include Indian Point 3.

Consolidated Edison executed Indemnity Agreement No. B-19 with the Commission on January 12, 1962. At such time as a license is issued for pre-operational fuel storage for Indian Point 3, the Indemnity Agreement will be amended to provide coverage for that activity.

Proof of financial protection will be furnished prior to, and the indemnity agreement amendment executed as of, the effective date of the Special Nuclear Material

License, for which separate application is being made.

William J. Cahill, Jr.

Sworn to before me on
July 19 1974.

Antonio Monteavaro
Notary Public

ANTONIO MONTEAVARO
Notary Public State of New York
No. 03-9830696
Qualified in Bronx County
Term Expires March 30, 1975

TABLE 1

Indian Point 3 Startup Schedule

			Day No.
Fuel Loading	Start	11/20/74	1
	End	12/18/74	29
Subcritical Testing	Start	12/20/74	31
	End	1/20/75	62
Initial Criticality		1/25/75	67
Low Power Testing	End	2/10/75	83
Testing up to 50%	End	3/10/75	111
Testing up to 91%	End	4/25/75	157

TABLE 2

Major Tests at Various Power Levels

Hot Zero Power Up to 10% Power	10% Power to 50% Power	50% Power to 91% Power
1. Thermocouple/ RTD Intercalibration	1. Power Coefficient Measurement	1. Power Coefficient Measurement
2. Nuclear Design Check Tests	2. Power Range Instrumentation Calibration	2. Power Range Instrumentation Calibration
3. Control Rod Assembly Group Calibration	3. Load Swing Test	3. Load Swing Tests
4. Power Coefficient Measurement	4. Turbine Trip	4. Dynamic Control Rod Drop Test
5. Control Rod Assembly Drop Tests	5. Pseudo Rod Ejection Test	5. Load Reduction Test
6. Minimum Shutdown Verification	6. Static Control Rod Assembly Drop Test	6. Part-Length Rod Group Operational Maneuvering
7. Pseudo Rod Ejection Test	7. Automatic Control System Checkout	
8. Turbo-Generator Synchronization		