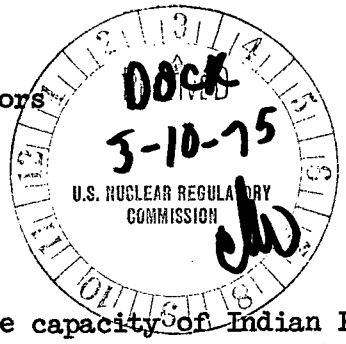
William J. Cahill, Jr.
Vice President

Consolidated Edison Company of New York, Inc.
4 Irving Place, New York, N Y 10003
Telephone (212) 460-3819

March 4, 1975

Re Indian Point Unit No. 2
Docket No. 50-247



Mr. Karl R. Goller
Assistant Director for Operating Reactors
Directorate of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Goller

In order to increase spent fuel storage capacity of Indian Point Unit No. 2, Con Edison plans to replace the present storage racks with racks of a modified design. The new design provides a closer spacing of spent fuel assemblies so there will be almost twice as many storage locations as at present.

The proposed design concept and design criteria for these modifications and the schedule of major items to be accomplished are discussed in the attached report.

The project schedule is based on the completion of all work by February 16, 1976, in time for the pool to receive spent fuel discharged from the first region. To meet this scheduled completion date, NRC preliminary review of the proposed modification is requested to be completed before April 4, 1975, to confirm that the design concept and criteria are generally acceptable before design of the racks is finalized.

Contingent on NRC response to this submittal by April 4, 1975, we plan to submit promptly thereafter a request for NRC approval to carry out the modification. Our schedule then allows ninety days before fabrication of the new racks must begin. The modification approval request will be in the form of a request for a license amendment which will include appropriate revisions to the Indian Point Unit No. 2 Technical Specifications.

Your immediate consideration of the request will be appreciated. Should you have any questions, please contact us.

Very truly yours

William J. Cahill, Jr.
Vice President

attach.
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INDIAN POINT UNIT NO. 2 - FUEL POOL MODIFICATION

I. Reason for Modification

The present spent fuel storage capacity at Indian Point Unit No. 2 is 264 assemblies. An increase in the spent fuel storage capability to 478 assemblies would provide storage capacity for all spent fuel to be discharged until June 1982. This increased capacity can be achieved by replacing the present spent fuel storage racks with new racks that store the fuel in a more closely packed lattice.

There will be no spent fuel in the Indian Point Unit No. 2 pool before February 16, 1976, the time of the first scheduled discharge. Completion of the proposed modification before this date will permit the modification to be performed without the additional procedures and safety considerations that would be necessary if the pool contained spent fuel assemblies.

II. New Spent Fuel Rack Design

1. General Criteria

The new spent fuel racks will meet all relevant design criteria of ANSI Standard N18.2-1973 (Revised, August 1974) and draft ANSI Standard N210 (Revised, January 1975).

2. Description of Racks

The new racks will be similar in design to the present racks with the following exceptions:

a. The center-to-center spacing of the storage locations is reduced from the present 20.5 inches to 14 inches.

b. To insure subcriticality with the reduced spacing, every storage location will have a seven inch wide, 1/8 inch thick boron-stainless steel plate on each of the four sides. The plates will run the full length of the active fuel region of an assembly and will be welded to the stainless steel angles that form the storage location.

These changes, shown in Figures 1 and 2, will permit nearly twice as many fuel assemblies to be stored in the same space.

The racks rest on the stainless steel liner plate at the bottom of the storage pool. Each rack is seismically restrained at the bottom by two 4.5-inch diameter guide pins and at the top by removable plates which connect the rack to the adjacent racks. The sides of racks adjacent to the storage pool walls have kicker plates at the top to provide additional seismic stability.

3. Structural Design

The racks are designed to resist the combined loadings of the dead weight of the cells, the weight of the spent fuel assemblies and seismic loads. The racks are considered to be Class I (seismic).

All design is in accordance with the AISC Specification for Design, Fabrication and Erection of Structural Steel for Buildings, 1970. Stresses are within AISC working stress allowable for normal loading conditions (dead load plus weight of spent fuel assemblies) and within 0.9Fy for the

faulted condition (dead load plus weight of spent fuel assemblies plus safe shutdown earthquake).

4. Nuclear Criticality Design

The spacing of the storage locations and the presence of the boron-stainless steel plates will insure subcriticality by an adequate margin. Con Edison's calculations, confirmed by independent analysis, demonstrate that K_{eff} will be less than the present Indian Point 2 Technical Specifications limit. This result is valid for the following conditions:

a. Fresh, unirradiated fuel of 3.5 w/o enrichment

b. Room temperature

c. No soluble boron

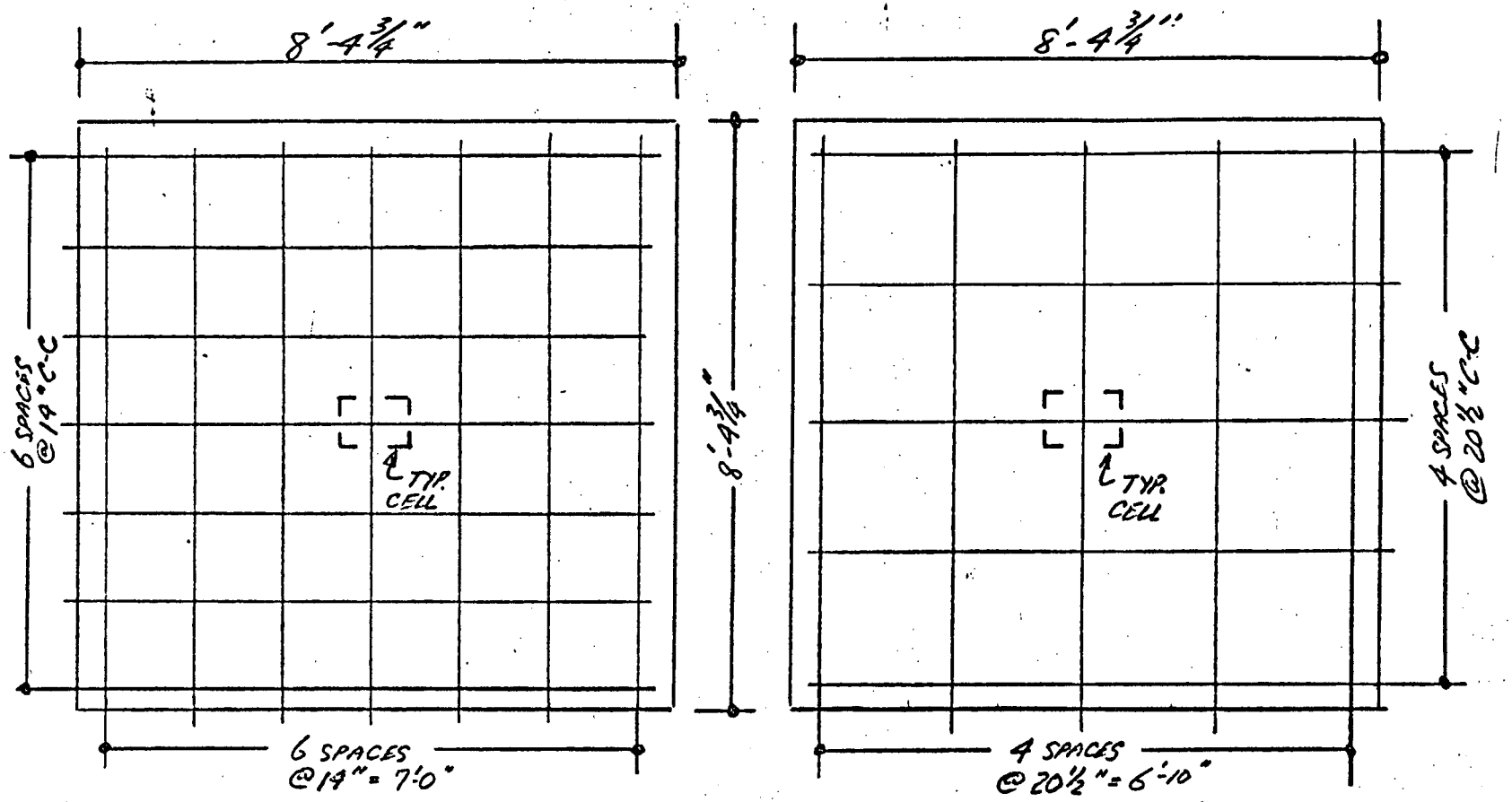
d. Assumed infinite array of fuel assemblies.

5. Spent Fuel Pool Cooling Capacity

The adequacy of the installed cooling system will be determined. A set of curves will be generated showing the heat generation and heat removal rates from the time of the first discharge until the entire storage capacity is utilized. The analysis will cover two cases. One case will consist of spent fuel discharges to the pool from regular refueling outages. The other case will consist of a full core discharge to the pool at the time that will produce the maximum heat generation rate in the pool.

III. Fuel Pool Modification Schedule

Date	Item
March 4, 1975	Preliminary modification description submitted to NRC.
April 4, 1975	Preliminary description approval received. Rack drawings finalized.
April 18, 1975	Application filed for Amendment to license.
July 25, 1975	NRC approval received.
July 25, 1975 to January 16, 1976	Fabrication and delivery of new racks.
December 8, 1975 to January 16, 1976	Removal of present racks.
January 16, 1976 to February 16, 1976	Installation of new racks.
February 16, 1976	Pool ready to receive spent fuel. (Project must be complete by this date to avoid performing the modification with spent fuel in the pool.)



PROPOSED

7×7 ARRAY = 47* CELLS/RACK

EXISTING

5×5 ARRAY = 25 CELLS/RACK

* TWO CELLS ARE LOST DUE TO POSITION OF BOTTOM GUIDE PIN

PLAN OF TOP OF SPENT FUEL STORAGE RACK

FIGURE 1

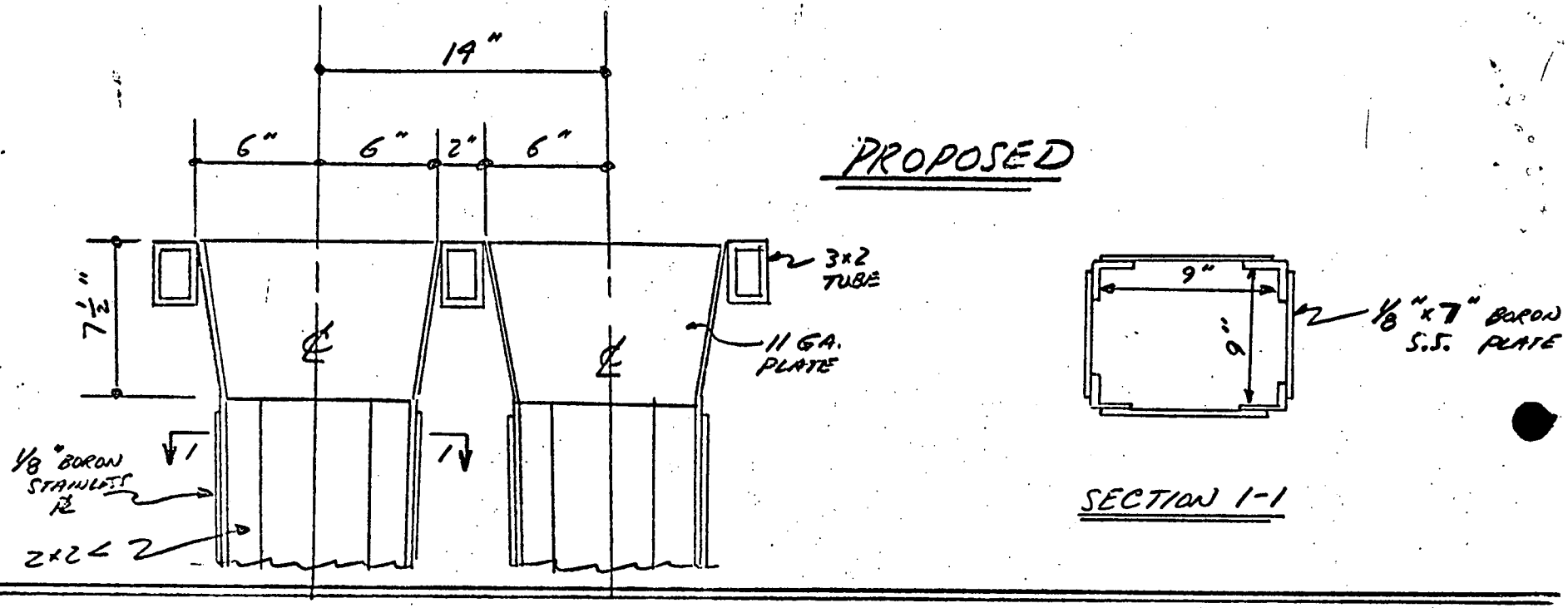


FIGURE 2

DETAILS OF TOP OF FUEL STORAGE CELL