123 Main Street
White Plains, New York 10601
914 681.6240

NewYork Power Authority

November 2, 1987
IPN-87-050

John C. Brons
Executive Vice President
Nuclear Generation

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Subject: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
Detailed Control Room Design Review

References: 1. Letter from J. C. Brons to S. A. Varga, dated December 18, 1986 (IPN-86-62), entitled "Detailed Control Room Design Review."

Dear Sir:

In Reference 1, the Authority committed to perform a control room emergency lighting system survey during the Cycle 5/6 refueling outage. This survey was performed during the refueling outage in accordance with the guidance of NUREG-0700, "Guidelines for Control Room Design Reviews." Attachment 1 to this letter provides a description of the survey and the survey results.

Should you or your staff have any questions regarding this matter, please contact Mr. P. Kokolakis of my staff.

Very truly yours,

John C. Brons
Executive Vice President
Nuclear Generation

cc: Resident Inspector's Office
Indian Point Unit 3
U.S. Nuclear Regulatory Commission
P. O. Box 337
Buchanan, NY 10511

U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

A003
1/1

Joseph D. Neighbors, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects I/II
U.S. Nuclear Regulatory Commission
Mail Stop 428
Washington, D.C. 20555

ATTACHMENT 1 TO IPN-87-050
CONTROL ROOM EMERGENCY LIGHTING SURVEY

NEW YORK POWER AUTHORITY
INDIAN POINT 3 NUCLEAR POWER PLANT
DOCKET No. 50-286

A. Control Room Emergency Lighting System Description

The control room emergency lighting system consists of 21 light fixtures arranged on three circuits. Each fixture consists of a 150 watt incandescent spotlight bulb.

The emergency lighting system is physically and electrically independent from the normal lighting. The emergency lighting fixtures are separate fixtures fed from a separate distribution panel and are dedicated for emergency use only. The power supply to the emergency lighting system is controlled by an automatic AC/DC transfer switch. On a loss of AC power supply to the transfer switch, the switch automatically transfers to DC power. Failure of the normal control room lighting, as sensed by a loss of AC power, causes the automatic transfer switch to supply DC power to the emergency lighting system.

B. Control Room Emergency Lighting Survey Method

Illumination levels were measured on each of the control board panels and work surfaces with a Weston Model 614 footcandle meter. The meter orientation during measurements was in accordance with the IES Lighting Handbook. The IES Lighting Handbook, 1981 Reference Volume states that the measuring instrument should be located so that when illumination level measurements are taken, the surface of the light sensitive cell is in the plane of the work or that portion of the work on which the critical visual task is performed - horizontal, vertical or inclined. In accordance with this method, the measurements on the vertical panel were made with the light sensitive cell in the vertical plane and the measurements on the flight panel inclined consoles and other horizontal work surfaces were made with the cell parallel to the surface. The cell was oriented, in all cases, such that only incident light was measured. Light reflected from or generated by the control panel was not measured by the cell.

C. Control Room Emergency Lighting Survey Results

NUREG-0700 Section 6.1.5.4 provides guidelines for emergency lighting levels. The control room emergency illumination system should be designed to provide a minimum illumination level of 10 footcandles at all work stations in the primary operating area.

The measured illumination levels varied from 1 to 26 footcandles. The majority of the measured illumination levels were five footcandles or less. The localized high illumination levels are attributable to the meter being located in the spotlight area. The lower illumination levels, in general, were at work stations installed after the original control room design, i.e., radiation monitoring panels, containment parameters panels and fire protection panels.

D. Control Room Emergency Lighting Survey Resolutions

The existing emergency lighting system is adequate for its intended function. During the test, personnel performing the emergency light survey were required to move throughout the control room, read the light meter and enter the readings on the test data sheets. All these actions were readily performed with the illumination provided by the emergency lighting system. As noted previously, the meter orientation was such that light generated at the panel was not measured. Light is generated at the panels by a number of devices such as meter face internal lights, position indication lights and status lights. In a subdued lighting environment, control panel internally lighted devices emphasize and highlight panel components and their status. The emergency lighting system provides adequate light to read meters and nameplates at the panels and to distinguish panel components which may require operator action.

While the NUREG-0700 guidelines are not satisfied with respect to the measured emergency lighting levels, the actual illumination levels are adequate for operator actions. As such, no modifications to the existing emergency lighting system are planned.