



Entergy Nuclear Northeast
Indian Point Energy Center
450 Broadway, GSB
P.O. Box 249
Buchanan, NY 10511-0249
Tel 914 734 6700

Fred Dacimo
Site Vice President
Administration

December 20, 2006

Re: Indian Point Units 2 and 3
Dockets 50-247 and 50-286
NL-06-126

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

**SUBJECT: Revised Test Plan for Indian Point Emergency Notification System
in accordance with NRC Order EA-05-190 (TAC MD2400 / 2401)**

- REFERENCES:
1. NRC letter to Entergy regarding Confirmatory Order EA-05-190 for the Indian Point Emergency Notification System, dated January 31, 2006.
 2. Entergy letter (NL-06-076) regarding Test Plan for Indian Point Emergency Notification System; dated July 5, 2006
 3. NRC letter to Entergy regarding Acceptance of Test Plan for Indian Point Emergency Notification System; dated September 26, 2006.

Dear Sir or Madam:

Entergy Nuclear Operations, Inc (Entergy) is requesting NRC approval of a proposed revision of the test plan for the Indian Point Energy Center (IPEC) Emergency Notification System that is being installed in accordance with NRC Order EA-05-190 (Reference 1). The current test plan submitted by Entergy (Reference 2) was approved by NRC in Reference 3.

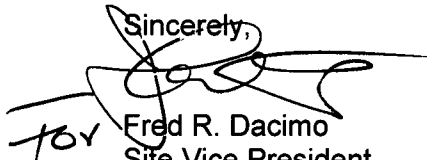
The proposed revision consists of a change in the number of test locations for the battery capacity and charger testing. The test locations for this aspect of the test are being changed from: "5 control stations, all 4 repeaters, and 4 sirens"; to: "1 control station, 1 repeater, and 4 sirens". The purpose of this portion of the test is to validate the design capability of the backup batteries to support operation in standby mode for 24 hours, followed by operation in alert mode for 15 minutes, followed by a recharge cycle. The number of test locations originally proposed included control stations in each county and all 4 repeater towers used in the communication system. There are personnel safety considerations associated with performing the initial battery

AX45

discharge step required for establishing the initial condition for the test and all of the test locations originally proposed are not required to demonstrate compliance with the Order.

Therefore, Entergy is proposing a change to the test plan so that the control station and repeater tower with the limiting loading condition will be subjected to the battery capacity and charger testing. Testing at these locations demonstrates compliance with the Order sections identified in the test plan. Functional testing of the other control stations and repeater sites will still be accomplished in other portions of the test as shown in the test plan. Entergy has discussed this proposed change with county officials.

The revised test plan is provided in Attachment One, with revision bars in the margins indicating changed sections. In addition to the proposed change in test locations, Entergy has updated applicable portions of the test plan to reflect new design information issued since the current version of the test plan was submitted. Approval of this test plan revision is requested by January 16, 2007. There are no new commitments identified in this submittal. If you have any questions or require additional information, please contact Mr. Patric W. Conroy, IPEC Licensing Manager at (914) 734-6668.

Sincerely,

TOY Fred R. Dacimo
Site Vice President
Indian Point Energy Center

cc:

Mr. John P. Boska, Senior Project Manager, NRC NRR DORL
Mr. Samuel J. Collins, Regional Administrator, NRC Region I
NRC Resident Inspector's Office, Indian Point 2
NRC Resident Inspector's Office, Indian Point 3
Mr. Peter R. Smith, NYSERDA
Mr. Paul Eddy, NYS Department of Public Service

ATTACHMENT ONE TO NL-06-126

**SIREN SYSTEM TEST PLAN REVISION FOR
COMPLIANCE WITH NRC ORDER EA-05-190**

**ENERGY NUCLEAR OPERATIONS, INC
INDIAN POINT NUCLEAR GENERATING UNITS NO. 2 and 3
DOCKETS 50-247 and 50-286**

SIREN SYSTEM TEST PLAN REVISION FOR COMPLIANCE WITH NRC ORDER EA-05-190

PURPOSE:

The purpose of this test plan is to describe the technical approach and scope of testing to be performed to verify that the design and functional requirements specified in NRC Order EA-05-190 (Reference 1) are met following installation of a new Prompt Alert and Notification System (ANS; a.k.a. ENS) for the Indian Point Energy Center. The scope of testing covered by this plan is directed at overall integrated system performance testing and is therefore in addition to the component level factory acceptance testing that is performed prior to field installation and post-installation tests which verify field connections.

Section IV.II.C.3 of the Order states:

Prior to declaring the ENS operable, the Licensee shall, in accordance with a test plan submitted to and approved by the NRC in conjunction with the design submittal, demonstrate satisfactory performance of all (100%) of the ENS components including the ability of the backup power supply to meet its design requirements.

Therefore, NRC approval of this test plan is required.

SCOPE OF TESTING:

For purposes of discussion in this test plan, the new ANS can be treated as consisting of 3 primary elements; control stations, repeaters, and sirens.

- There will be 12 control stations; 3 in Westchester County, 2 in Orange County, 2 in Rockland County, 2 in Putnam County and 3 at the Indian Point Energy Center.
- There will be 4 communications repeaters, with proposed locations that provide suitable radio frequency coverage.
- There are 150 sirens with locations as listed in the design report (Reference 2).

Table One provides an overview of the test approach to be used for demonstrating compliance with applicable requirements from the Order. The basic approach consists of a loss of power test for a sample of locations, followed by a battery recharge test at those locations. Then a separate integrated system performance test is conducted that involves equipment at all locations.

TABLE ONE – TEST OVERVIEW

Line Item / Short Title	Reference Order Sections	Test Approach Overview (also refer to Section: "Additional Information")
<p>1. / Backup Power Standby Mode 24 hours</p>	<p>Section II (b): each PAS and PAS Alerting Appliance (PASAA) must receive adequate power to perform their intended functions such that backup power is sufficient to allow operation in standby mode for a minimum of 24 hours and SEE LINE 2</p> <p>Section IV.II.A.2: The backup power supply for each PAS and PASAA shall be designed for operation in standby mode, including, but not limited to: radio transceivers, testing circuits, sensors fully operational and providing polling data to the activation, control, monitoring, and test system for at least 24 hours without AC supply power from the local electric distribution grid.</p>	<ul style="list-style-type: none"> • Configure new batteries at each test location (1 control station, 1 repeater, and 4 sirens) to a predetermined discharged state that accounts for unfavorable environmental conditions (temperature) and battery end-of-life performance • Configure equipment at each test location for predetermined limiting current draw for the standby mode. • Perform simultaneous loss of power test for all test locations. • Verify that the test control station with loss of power remain in the normal operation mode and perform regular polling and feedback monitoring functions. • Measure battery voltages at each test location. <p>(Continued on Line 2; see also Lines 4, 5, and 6)</p>

Line Item / Short Title	Reference Order Sections	Test Approach Overview (also refer to Section: "Additional Information")
<p>2. / Backup Power Alert Mode 15 minutes</p>	<p>Section II (b): each PAS and PAS Alerting Appliance (PASAA) must receive adequate power to perform their intended functions such that backup power is sufficient to allow operation ... in alert mode for a minimum of 15 minutes.</p> <p>Section IV.II.A.2: The backup power supply then shall be capable of performing its intended function, without recharge, by operating the PAS and PASAA in its alerting mode at its full design capability for a period of at least 15 minutes.</p> <p>This sequence [i.e.; Lines 1 and 2] shall be assumed to occur at the most unfavorable environmental conditions including, but not limited to, temperature, wind, and precipitation specified for PAS and PASAA operation and assume that the batteries are approaching the end of their design life (i.e., the ensuing recharge cycle will bring the batteries back to the minimum state that defines their design life).</p>	<ul style="list-style-type: none"> • At the end of the 24 hour test period for the standby mode, initiate operation in the Alert Mode for a minimum of 15 minutes at all test locations. • Measure amplifier output power at each siren test location to verify analysis limits from sound propagation study. • At the end of the 15 minute alert mode test, measure remaining battery capacity for comparison to predetermined acceptance criteria. <p>(Continued on Line 3)</p>
<p>3. / Recharge capability</p>	<p>Section II (c): batteries used for backup power must recharge to at least 80 percent of their capacity in no less than 24 hours.</p> <p>Section IV.II.A.3: In defining battery design life, automatic charging shall be sized such that batteries in the backup power are fully recharged to at least 80 percent of their maximum rated capacity from the fully discharged state in a period of not more than 24 hours.</p>	<ul style="list-style-type: none"> • At completion of loss of power test, configure batteries at each test location to a fully discharged state. • Monitor charger output at the beginning and end of the recharge period and verify 80% battery capacity is achieved within 24 hours.

Line Item / Short Title	Reference Order Sections	Test Approach Overview (also refer to Section: "Additional Information")
<p>4. / Loss of power indication (Licensee)</p>	<p>Section II (d): except for those components that are in facilities staffed on a continuous basis (24 hours per day, 7 days per week) or otherwise monitored on a continuous basis, immediate <u>automatic indication</u> of a loss of power must be provided to the Licensee and SEE LINE 5</p> <p>Section IV.II.A.5: Except for those components that are in facilities staffed on a continuous basis (24 hours per day, 7 days per week) or otherwise monitored on a continuous basis, there shall be a feedback system(s) that provides immediate automatic indication of a loss of power to the Licensee and SEE LINES 5 AND 6</p>	<p>Refer to Line 1; During loss of power test, verify loss of power indication for all tested locations is displayed at all 3 control stations at Indian Point Energy Center.</p>
<p>5. / Loss of power indication (Gov't agencies)</p>	<p>Section II (d): except for those components that are in facilities staffed on a continuous basis (24 hours per day, 7 days per week) or otherwise monitored on a continuous basis, immediate <u>automatic indication</u> of a loss of power must be provided to ... appropriate government agencies.</p> <p>Section IV.II.A.5: Except for those components that are in facilities staffed on a continuous basis (24 hours per day, 7 days per week) or otherwise monitored on a continuous basis, there shall be a feedback system(s) that provides immediate automatic indication of a loss of power to the appropriate government agencies, and SEE LINE 6</p>	<p>Refer to Line 1; During loss of power test, verify loss of power indication for all tested locations within that county is displayed at the 9 control stations located at County facilities.</p>

Line Item / Short Title	Reference Order Sections	Test Approach Overview (also refer to Section: "Additional Information")
<p>6. / Loss of power notification (Licensee)</p>	<p>Section II (e): except for those components that are in facilities staffed on a continuous basis (24 hours per day, 7 days per week) or otherwise monitored on a continuous basis, an automatic notification of an unplanned loss of power must be made to the Licensee in sufficient time to take compensatory action before the backup power supply can not meet the requirements of Section IV, part II. A. 2. [i.e.; operation in standby mode for ≥ 24 hours followed by alerting mode for ≥ 15 minutes]</p> <p>Section IV.II.A.5: Except for those components that are in facilities staffed on a continuous basis (24 hours per day, 7 days per week) or otherwise monitored on a continuous basis, ... an automatic notification of an unplanned loss of power must be made to the Licensee ... in sufficient time to take compensatory action before the backup power supply can not meet the requirements of Section IV, part II. A. 2. [i.e.; operation in standby mode for ≥ 24 hours followed by alerting mode for ≥ 15 minutes]</p>	<p>Refer to Line 1; During loss of power test, verify loss of power notification signal is received at designated backup pager devices.</p> <p>Note that the primary means of notification will be use of administrative controls which ensure timely periodic monitoring of IPEC control stations.</p>
<p>7. / Integrated Test</p>	<p>Section IV. II.C.3: Prior to declaring the ENS operable, the Licensee shall, in accordance with a test plan submitted to and approved by the NRC in conjunction with the design submittal, demonstrate satisfactory performance of all (100%) of the ENS components including the ability of the backup power supply to meet its design requirements.</p>	<p>Line items 1 through 6 address the test approach to be used to demonstrate the ability of the backup power supply to meet the design requirements. An integrated test is then conducted with normal AC power supply to demonstrate satisfactory performance of all ENS components.</p>

ADDITIONAL INFORMATION:

This test plan supplements the test information provided in Sections 15.1 and 15.2 of the Design Report (Reference 2) and supersedes Section 15.2 E, "Random Backup Power Verification" of that Report.

Backup power supply used for sirens, repeaters, and control stations is Gelled-Electrolyte (GEL) type batteries.

The loss-of-power test is performed with new batteries that are pre-discharged a specified amount to account for the limiting ambient design temperature and end-of-life battery conditions. The limiting temperature used for the siren and repeater batteries is 0°F. Batteries are mounted in weather-tight enclosures so that the environmental effects of wind and precipitation are not factors in battery performance. The control station batteries are located in controlled temperature facilities, so that a capacity reduction for ambient temperature is not required. The initial condition discharge state for the siren and repeater batteries is 40% of fully-charged capacity to account for temperature and end-of-life. The initial condition discharge state for the control station batteries is 50% of fully charged capacity.

The loss of power test is conducted by opening the AC disconnect at each of the tested components. The measured voltage for all batteries being tested must be at least 26VDC at the beginning of the test and shall not fall below 22 VDC when measured at intervals during the test.

The sample siren locations for the loss of power test are the most limiting location in each County with respect to the sound propagation requirements in that County. The control station and repeater location selected for this test are those with the highest power load requirement.

REFERENCES:

1. NRC Confirmatory Order EA-05-190 to Entergy Nuclear Operations, Inc; dated January 31, 2006; regarding Backup Power for Emergency Notification System at Indian Point.
2. Entergy Letter NL-06-101 to New York State Emergency Management Office; dated September 28, 2006; regarding Indian Point Energy Center Prompt Alert and Notification System Design Report.