

New Hampshire Yankee

NYN-92085

June 26, 1992

United States Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

Attention: Mr. Thomas T. Martin, Regional Administrator

- References:
- (a) Facility Operating License No. NPF-86, Docket No. 50-443
 - (b) Telephone Conference between Mr. G. M. Kelly, Mr. G. Edison, et. al., USNRC and Mr. T. L. Harpster et. al. NHY, June 26, 1992
 - (c) USNRC Information Notice 92-40 "Inadequate Testing of Emergency Bus Undervoltage Logic Circuitry"

Subject: Request for Temporary Waiver of Compliance

Dear Mr. Martin:

New Hampshire Yankee (NHY) has determined, while analyzing NRC Information Notice 92-40, "Inadequate Testing of Emergency Bus Undervoltage Logic Circuitry", that the 18 month surveillance testing program for the Seabrook Station Emergency Diesel Generators (EDG) has not adequately tested all aspects of the EDG's. Specifically, the capability of the emergency bus undervoltage circuitry to de-energize the emergency busses was not included in the 18 month surveillance tests.

A Justification for Continued Operation (JCO) of Seabrook Station supporting this request is provided in the Enclosure. This JCO documents New Hampshire Yankee's (NHY) determination that the Seabrook Station EDGs are fully functional and capable of performing their design function if they were called upon to do so. NHY believes that there are no concerns related to safety or to the capability of the EDG's to perform their design function if called upon to do so. This determination was discussed during a telephone conversation (Reference 2) today between Mr. G. M. Kelly, Mr. G. Edison, and other NRC representatives and Mr. T. L. Harpster and others of NHY.

By way of this letter NHY is requesting a Temporary Waiver of Compliance from the requirement to test the emergency bus undervoltage logic circuitry on an 18 month basis, while shut down, until the second refueling outage, which is currently scheduled to begin September 7, 1992, or until the next time the plant enters MODE 5. New Hampshire Yankee will revise the surveillance procedures for the 18 month loss-of-offsite power test to include

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the testing of the emergency bus undervoltage logic circuitry. This test will be performed during the refueling outage, scheduled for September 7, 1992 or the next time the plant enters MODE 5, whichever occurs first. In addition, NHY will institute administrative controls to ensure that the Reserve Auxiliary Transformer is not used as the normal configuration for the plant power source for the duration of this waiver.

New Hampshire Yankee believes that no additional safety benefit will be realized by shutting the plant down to MODE 5 to perform an additional loss-of-power test to re-verify the capability of the emergency bus undervoltage circuitry to sense an undervoltage condition and trip the appropriate supply breakers. Such action would put the plant through an unnecessary cycle. NHY has determined, as discussed in detail in the Enclosure, that the successful Preoperational Test Program and Power Ascension Test Program testing performed to date and the response to the June 27, 1991 isolation of the grid from the Unit Auxiliary Transformer demonstrates that the EDG's are fully functional and capable of performing their design function if called upon to do so when aligned in their normal configuration on the Unit Auxiliary Transformer. In addition, NHY has visually verified that the cables between the Emergency Power Sequencer and the Reserve Auxiliary Transformer (RAT) breaker compartments were installed as designed.

This request for a Temporary Waiver of Compliance has been reviewed by the Station Operation Review Committee.

Should you have any questions regarding this matter please contact Mr. Terry L. Harpster, Director of Licensing Services, at (603) 474-9521, extension 2765.

Very truly yours,


Ted C. Feigenbaum
President and Chief Executive Officer

TCF:JMP/tad
Enclosure

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ENCLOSURE TO NYN-92085

REQUEST FOR TEMPORARY WAIVER OF COMPLIANCE

Nonconforming Condition

New Hampshire Yankee (NHY) has determined, while analyzing NRC Information Notice 92-40, "Inadequate Testing of Emergency Bus Undervoltage Logic Circuitry", that the 18 month surveillance testing program for the Seabrook Station Emergency Diesel Generators (EDG) has not adequately tested all aspects of the EDG's. Specifically, the capability of the emergency bus undervoltage circuitry to de-energize the emergency buses was not included in the 18 month surveillance tests.

New Hampshire Yankee performs the loss-of-offsite power test once every 18 months while shutdown, per Surveillance Requirement 4.8.1.1.2f.4), utilizing procedures EX1804.001, "Diesel Generator 1A 18 Month Operability and Engineered Safeguards Pump and Valve Response Time Testing Surveillance" and EX1804.015, "Diesel Generator 1B 18-Month Operability and Engineered Safeguards Pump and Valve Response Time Testing Surveillance". These procedures initiate the test by manually opening the normally closed supply breakers [A51 and A71 from the Unit Auxiliary Transformer (UAT)] to the E5 and E6 emergency buses. The simulation of a loss-of-offsite power in this manner does not demonstrate that the undervoltage logic circuitry would automatically de-energize the emergency bus in response to an undervoltage condition. Thus, the loss-of-offsite power tests performed by this test method does not test the capability of the undervoltage relay contacts to trip the normal bus supply breakers from the UAT to the emergency busses.

New Hampshire Yankee has determined that all of the surveillance testing specified in the Technical Specifications has been performed. The nonconforming condition is related to a surveillance procedure inadequacy.

This failure to test the emergency bus undervoltage circuitry constitutes missed portions of surveillances due to Surveillance Requirement 4.8.1.1.2f.4) not being performed to test all of the attributes of the EDG's, and specifically the ability of the emergency bus undervoltage logic circuitry to trip the normal bus supply breakers.

Satisfactory Emergency Bus Undervoltage Logic Circuitry Tests

NHY has verified that the under voltage logic circuitry has been tested appropriately and satisfactorily on three occasions. During the Preoperational Test Program, the EDG undervoltage logic circuitry was appropriately tested twice during the performance of preoperational tests. During the period of March 3 - 8, 1986, Preoperational Test Procedure 1-PT(I)-39.1, "Loss of Offsite Power Tests" was satisfactorily performed and during the period of March 24 - 28, 1986, Preoperational Test Procedure 1-PT(I)-39.2, "Loss of Offsite Power With Engineered Safeguard Features Actuation" was satisfactorily performed. During the Power Ascension Test Program on August 1, 1990, procedure ST-39, "Loss of Offsite Power" was successfully performed.

Each of these tests initiated the loss-of-offsite power condition by removing the 345kV supply from the plant busses, thereby requiring the circuitry to recognize an undervoltage condition.

In each case the emergency bus undervoltage logic circuitry properly sensed the undervoltage condition and tripped the appropriate supply breakers.

In addition, NHY has the experience of an operating event that verified that the undervoltage logic circuitry will work if it is called upon to do so. On June 27, 1991, a turbine generator trip with a subsequent reactor trip occurred while the plant was at 100% power. The event occurred during the performance of a preventive maintenance activity on a breaker failure relay for 345kV circuit breaker 11. As the relay was being returned to service (closure of two knife blade switches), momentary arcing occurred across the contacts. The arcing caused a high speed tripping relay to pick up without picking up an associated lockout relay. This relay actuation resulted in 345kV circuit breakers 11 and 163 opening without generating a signal to open the UAT supply breakers to unit busses 1 through 6. Because of this, the automatic transfer to the Reserve Auxiliary Transformer (RAT) was prevented. This condition isolated the unit from the grid, resulting in the automatic starting of both EDG's. The EDG's started per their design requirements and energized the 4kV busses E5 and E6. This starting of the EDG's during an actual loss of the grid, due to breaker isolation, verified the proper operation of the undervoltage logic circuitry including the undervoltage relay contacts which trip the normal bus feed breakers from the UAT's. This event was previously reported to the NRC in Licensee Event Report (LER) 91-008.

Significance

NHY has determined that there is no adverse impact upon the protection afforded to the health and safety of the public nor to the plant due to the inadequate 18 month surveillance testing of the emergency bus undervoltage logic circuitry. The EDG's are fully functional and NHY has significant confidence that they would be capable of performing their design function if called upon to do so.

The loss-of-offsite power tests that were last performed in October 1991 during the refueling outage verified all of the required attributes of the EDG's other than the emergency bus undervoltage logic circuitry. The emergency bus undervoltage logic circuitry was tested per procedure on August 1, 1990 and by the required response to an event on June 27, 1991. The combination of this testing, the EDG's successful response to the operational event on June 27, 1991 and the previous testing performed during the Preoperational Test Program provides NHY with a significant level of confidence that the EDG's will be capable of performing their design function if called upon to do so. NHY has visually verified that the cables between the Emergency Power Sequencer and the Reserve Auxiliary Transformer (RAT) breaker compartments were installed as designed. In addition, the trip coil on the RATs is tested and verified to be operable every 18 months. The continuity between the Emergency Power Sequencer and the supply breaker from the RATs was verified during the Startup Test Program.

Request for Temporary Waiver of Compliance

New Hampshire Yankee requests a Temporary Waiver of Compliance from the requirement to perform a loss-of-offsite power test, while the plant is shutdown, until the next refueling outage, which is currently scheduled to begin on September 7, 1992, or until the next time the plant enters MODE 5.

Corrective Action To Prevent Recurrence

New Hampshire Yankee will revise procedures EX1804.001, "Diesel Generator 1A 18 Month Operability and Engineered Safeguards Pump and Valve Response Time Testing Surveillance" and EX1804.015, "Diesel Generator 1B 18-Month Operability and Engineered Safeguards Pump and Valve response Time Testing Surveillance", to require that the appropriate test of the emergency bus undervoltage logic circuitry be performed as part of the loss-of-offsite power test. NHY will perform the loss-of-offsite power test for both EDG 1A and EDG 1B during the refueling outage which is currently scheduled to begin on September 7, 1992. In addition, if the plant should have a MODE 5 outage prior to the refueling outage the loss-of-offsite power test will be performed. The root cause for the failure to properly perform Surveillance Requirement 4.8.1.1.2f.4) will be determined and documented in a Licensee Event Report.

Compensatory Actions

New Hampshire Yankee has reviewed the potential for revised plant configurations that may provide compensatory actions and has determined that there are no configurations that would provide an additional safety benefit.

However, NHY has determined that the following compensatory measures will be in place for the duration of the waiver period, except as required for unplanned equipment failure

- no electrical distribution equipment, either normal or standby, will be unnecessarily taken out of service,
- no switchyard activities which could perturb the offsite power sources will be allowed,
- Shift Management will review all surveillances and tagging orders for impact on the electrical distribution system prior to authorizing the initiation of the activity,
- PSNH switchyard maintenance will be notified to refrain from work activities in the switchyard for the duration of this waiver without authorization from the Operations Manager,
- Operations Department personnel will be notified by a Nightorder to ensure that these measures remain in effect for the duration of this waiver.

Justification for Continued Operation

NHY has determined that the EDG's are fully functional and would be capable of performing their design function if called upon to do so. NHY also believes that no additional safety benefit will be realized by shutting the plant down to MODE 5 to perform an additional loss-of-offsite power test. Such action would put the plant through an unnecessary cycle. The testing performed to date and the satisfactory response to the June 27, 1991 isolation

of the grid from the Unit Auxiliary Transformer demonstrates that the EDG's are fully functional and capable of performing their design function if called upon to do so.

Therefore, in consideration of the above, NHY has determined that the continued operation of Seabrook Station until the beginning of the second refueling outage, which is currently scheduled to begin on September 7, 1992, is justified and, no additional benefit would be gained by shutting the plant down.

No Significant Hazards Consideration

New Hampshire Yankee has evaluated the proposed temporary waiver of compliance from Technical Specification Surveillance Requirement 4.8.1.1.2 f.4) and has determined that it does not involve a significant hazards consideration pursuant to 10CFR50.92 in that operation of the facility in accordance with the proposed waiver would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated; or
 2. Create the possibility of a new or different kind of accident from any accident previously evaluated; or
 3. Involve a significant reduction in a margin of safety.
- The basis for this determination of no significant hazards is provided below.

Background:

During the first refueling outage Technical Specification Surveillance Requirement 4.8.1.1.2 f.4) was performed, per procedure EX1804.001 "Diesel Generator 1A 18 Month Operability and Engineered Safeguards Pump and Valve Response Time Testing Surveillance" and EX1804.015 "Diesel Generator 1B 18 Month Operability and Engineered Safeguards Pump and Valve Response Time Testing Surveillance". During these tests the supply breakers from the UATs were opened manually and not automatically via the undervoltage protection system. All other attributes of the surveillance requirement were however verified during this testing. Although the Technical Specifications do not explicitly require the automatic tripping of the supply breakers from the UATs, the intent is that this automatic feature of the undervoltage protection system should be exercised. The UFSAR implies strongly that this feature will be tested in Section 8.3.1.2.a.2. "Criterion 18- Inspection and Testing of Electrical Power Systems" where the following commitment is made:

"During plant shutdown, and under conditions as close to normal as practical, the the full operational sequence that brings the system into operation including portions of the protection system and transfer of power among various offsite and on-site power supplies will be tested."

The preoperational and startup testing of the undervoltage protection system and the actuation of the system in June 1991 provides a high level of confidence that the emergency bus supply breakers from the UAT are fully functional and capable of automatically tripping open on a loss of bus voltage as designed. The intent of Technical Specification Surveillance

Requirement 4.8.1.1.2 f.4) was not satisfied by the deficient test procedure which does not test all attributes of the AC power system undervoltage protection system.

NHY has not fully met the intent of Technical Specification Surveillance Requirement 4.8.1.1.2 f.4). The test procedure for this surveillance is deficient and will be revised to fully test the AC power system undervoltage protection system by initiating automatic opening of the emergency bus supply breakers from the UATs. Additionally, because EX1804.001 and EX1804.015 cannot be performed while the plant is operating, a temporary waiver from the full requirements of Surveillance Requirement 4.8.1.1.2 f.4) is being requested of the NRC to allow continued operation.

1. The proposed temporary waiver of compliance does not involve a significant increase in the probability or consequences of an accident previously evaluated;

The testing deficiency which has been identified by NHY will not increase the probability of an accident previously evaluated in the UFSAR. The testing performed in NHY procedures EX1804.001 and EX1804.015 does not test all attributes of the AC power system undervoltage protection system as required by Technical Specification Surveillance Requirement 4.8.1.1.2 f.4) and as committed in the UFSAR Section 8.3.1.2.a.2. The test procedures will be revised such that they will meet the intent of Surveillance Requirement 4.8.1.1.2 f.4) and the UFSAR commitment for AC power system testing. Prior testing on the undervoltage protection system during preoperational and startup testing and an operational event in June 1991 have fully demonstrated that the system is capable of performing its design function when aligned to its normal configuration on the UAT.

2. The proposed temporary Waiver of compliance will not create the possibility of a new or different kind of accident from any accident previously evaluated;

The undervoltage protection system functionality has been verified during preoperational and startup testing and during the first operating cycle in June 1991. If a loss of offsite power condition or a degraded voltage condition were to occur it is highly improbable that the undervoltage protection system for each of the emergency busses E5 and E6 would fail to isolate the bus from the offsite power source.

3. The proposed temporary waiver of compliance will not involve a significant reduction in a margin of safety;

The test deficiency which has been identified by NHY will not reduce the margin of safety defined in the basis of any Technical Specification. The testing performed in NHY procedures EX1804.001 and EX1804.015 does not test all attributes of the AC power system undervoltage protection system as required by Technical Specification Surveillance Requirement 4.8.1.1.2 f.4) and as committed in the UFSAR Section 8.3.1.2.a.2. The test procedures will be revised such that they will meet the intent of Surveillance Requirement 4.8.1.1.2 f.4) and the UFSAR commitment for AC power system testing. Prior testing on the undervoltage protection system during preoperational and startup testing and an operational event in June 1991 have fully demonstrated that the system is capable of performing its design function.

The undervoltage protection system for Seabrook Station is described in Section 8.3.1.1 b.4. (page 83-5) of the Updated Final Safety Analysis Report (UFSAR). For First Level

Undervoltage Protection (loss of voltage on the 4160 V emergency bus E5 or E6) the UAT and RAT breakers are automatically tripped to isolate the bus. This feature of the undervoltage protection system was not tested for the Bus E5 supply breaker from the UAT, A51, or the Bus E6 supply breaker from the UAT, A71, during the loss of offsite power test which was performed during the first refueling outage pursuant to Technical Specification Surveillance Requirement 4.8.1.1.2 f.4). This feature of the undervoltage protection system was tested however during preoperational and startup testing and in June 1991 when the plant tripped and the emergency busses were loaded by the diesel generators.

Environmental Consequence

New Hampshire Yankee has evaluated the proposed Temporary Waiver of Compliance against the criteria for and identification of, licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21. It has been determined that the proposed waiver meets the criteria for categorical exclusion as provided for in 10 CFR 51.22(c)(9). This determination is based on the fact that this change is being proposed as a Temporary waiver to a license issued pursuant to 10 CFR 50, and the change represents a change in a requirement with respect to the testing frequency of a facility component located within the restricted area, and the change involves no significant hazards considerations. There is no change in the amount or type of releases made offsite, and there is not significant increase in individual or cumulative occupational radiation exposure.