



Duquesne Light

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October 26, 1984

United States Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, PA 19406

ATTENTION: Dr. Thomas E. Murley
Administrator

SUBJECT: Beaver Valley Power Station - Unit No. 2
Docket No. 50-412
General Electric Type HEA Lock-out Relays
Significant Deficiency Report No. 84-03, Final Report

Gentlemen:

This is the Final Report in reference to the above subject. Duquesne Light Company (DLC) notified the Region I office that an evaluation under 10CFR50.55(e) was underway on January 27, 1984. An extension for the submittal of the report to June 30, 1984, was requested by Mr. S. D. Hall of DLC Regulatory Affairs Department on June 14, 1984, and was granted by Mr. Lowell Tripp of NRC Region I.

Pursuant to the requirements of 10CFR50.55(e), interim reports were submitted on February 28, 1984, and June 29, 1984. This is the final report on this subject and it is anticipated that no further reports will be submitted.

SUBSCRIBED AND SWORN TO BEFORE ME THIS
26th DAY OF October, 1984.

Anita Elaine Reiter
Notary Public

ANITA ELAINE REITER, NOTARY PUBLIC
ROBINSON TOWNSHIP, ALLEGHENY COUNTY
MY COMMISSION EXPIRES OCTOBER 20, 1985
SDH/wjs
Attachment

DUQUESNE LIGHT COMPANY

By E. J. Woolever
E. J. Woolever
Vice President

cc: Mr. R. DeYoung, Director (3) (w/a)
Ms. M. Ley, Project Manager (w/a)
Mr. E. A. Licitra, Project Manager (w/a)
Mr. G. Walton, NRC Resident Inspector (w/a)
INPO Records Center (w/a)
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BEAVER VALLEY POWER STATION - UNIT NO. 2
DUQUESNE LIGHT COMPANY

Report on Potential Significant Deficiency No. 84-03
GE HEA Type Relays

1. SUMMARY

System Control (SC) had notified Stone & Webster Engineering Corporation (SWEC) on December 2, 1983, that a particular group of General Electric (GE) HEA type lock-out relays had a tendency to misoperate under certain conditions. These relays were manufactured between September 1980 and August 1983 (with corresponding date codes of KS, LS, MS, AT through MT, AU through MU, and AW through HW). BVPS-2 in its initial report (2NRC-4-019, dated February 28, 1984) indicated SC had supplied these types of relays with the subject date codes in panels PNL*REL-241, 249, 251, and 259. Further investigation by SC indicated that panels PNL*REL-250, 281, and 282 under purchase order 2BV-731 will have GE HEA lock-out type relays. In addition, 16 replacement relays were shipped to the field under purchase order 2BV-731. Also, 4KV switchgear under purchase order 2BV-304 and 480 volt switchgear under purchase order 2BV-307 were identified as having GE HEA lock-out type relays.

An investigation by field personnel on panels PNL*REL-241, 249, 251, and 259, and 16 replacement relays was conducted with the following results:

12 relays with subject date codes in PNL*REL-241
3 relays with subject date codes in PNL*REL-249
11 relays with subject date codes in PNL*REL-251
6 relays with subject date codes in PNL*REL-259
All 16 replacement relays with subject date codes

This resulted in 48 suspected relays being identified. A test was performed by field personnel in accordance with GE's instructions on the 48 suspected relays. Two of the 16 replacement relays shipped to the field failed the acceptance criteria given by GE while the remaining 46 relays were found to be acceptable.

Panels PNL*REL-250, 281, and 282 had not been delivered to the site at the time of BVPS-2's initial notification letter (2NRC-4-019). Since then, panel PNL*REL-250 has been received at the site and has received a receipt inspection, which had been revised to inspect for GE HEA relays with the subject date codes. No relays were identified as having the subject date codes. One relay manufacturer's date code could not be read. This relay was tested in accordance with GE's instructions and passed the test. Based upon the results of this test, this relay was accepted. Panels PNL*REL-281 and 282 will receive the same receipt inspection as PNL*REL-250 for these relays with the subject date codes once received at the site. If any are found, the relays will be returned to the manufacturer for replacement.

An investigation was conducted to determine if GE HEA lock-out type relays with the subject date codes were installed on 4KV and 480 volt switchgear under purchase orders 2BV-304 and 307, respectively. The

results of this investigation was that none of the relays with the subject date codes were installed on the 4KV and 480 volt switchgear under Purchase Orders 2BV-304 and 307.

2. IMMEDIATE ACTION TAKEN

Duquesne Light Company (DLC) directed SWEC to investigate whether any Class 1E equipment for BVPS-2 used HEA relays manufactured during the period in question. SWEC was instructed to follow the corrective action as recommended by GE for any potential problem with any questionable HEA relays identified at BVPS-2. SWEC was also instructed to notify DLC of their findings and the action taken. Mr. E. F. Kurtz, Jr., Manager of Regulatory Affairs, BVPS-2, notified Mr. Lowell Tripp, NRC Region I, of a potential reportable significant deficiency on January 27, 1984.

3. DESCRIPTION OF THE PROBLEM

GE has reported that a design change, which was intended to increase the relay's capability to operate at reduced voltages, caused a limited number of these relays to malfunction due to shocks or vibration. These relays were manufactured between September 1980 and August 1983 with date codes of KS, LS, MS, AT through MT, AU through MU and AW through HW. GE recommended that a check be performed to determine the force required to trip the armature. If the force was determined to be less than 500 grams or 1.1 lbs., the relay should be considered out of specification.

4. ANALYSIS OF SAFETY IMPLICATION

The two relays found to be out of specification were scheduled to be installed in either PNL*REL-241, PNL*REL-249, PNL*REL-251, or PNL*REL-259. If either relay were to have malfunctioned, this could have resulted in an inadvertent transfer of control of a safety-related component from the main control board to the emergency shutdown panel. This event would not change the state of the transferred component, nor would it alter the accuracy or validity of the instrument indications in the main control room. The inadvertent transfer of control could have an adverse impact on the safety of plant operations, to the extent that it would result in operator inconvenience or additional operator actions under certain postulated conditions. However, this would not significantly affect the control of the plant regarding accident mitigation functions or safe shutdown capabilities. Based upon the above, this is considered to be reportable.

5. CORRECTIVE ACTION TO REMEDY THE PROBLEM

The 48 GE HEA type relays with the subject date codes found to date at BVPS-2 have been inspected and tested by field personnel. Two out of the 48 relays found to date to have the subject date codes failed the GE acceptance test. These two relays have been returned to the vendor for replacement. Any additional relays of this type with the subject date codes identified will be tested in accordance with GE instruction. If they fail, they will be returned to the vendor for replacement.

In addition to the above corrective actions, BVPS-2 will use as an administrative control applied to the positioning of individual switches on the Emergency Shutdown Panel (ESP) and the Auxiliary Shutdown Panel (ASP) the Normal System Arrangement (NSA) position specified in Section 3 of the appropriate operating manual chapters (OMC). In addition, the OMC addressing abnormal procedures will contain a composite listing also specifying their NSA positions. These actions will minimize the impact of transfer control on transfer relay failure.

6. ADDITIONAL REPORTS

This is the final report on this subject. It is anticipated that no further reports will be submitted.