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Commonwealth Edison Company

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Dresden Nuclear Power Station
R. R. #1
Morris, Illinois 60450

April 14, 1972

Dr. Peter A. Morris, Director
Division of Reactor Licensing
U. S. Atomic Energy Commission
Washington, D.C. 20545

Regulatory File Cy.

Subject: License DPR-19, Dresden Nuclear Power Station
Unit #2, Section 6.6.C.1 of the Technical Specifications

Dear Dr. Morris:

This is to report a condition relating to the operation of the station, when, during an inspection of the Peeco flow switches installed in the plant, HPCI flow switch 2-2379 in line 2-2314-4" was found to be missing it's paddle and the two screws which hold the paddle in place.

Problem

Unit #2 was shutdown for its second partial refueling outage. Due to Peeco flow switch failures at other sites, it was decided to inspect four of the thirteen Peeco flow switches installed in Unit 2.

When HPCI flow switch 2-2379 was inspected, it was found to be missing its paddle and two mounting screws.

Investigation

Measurements of the piping configuration and comparisons with similar switches indicated that the missing paddle was about three inches long and 1-1/8 inches wide and consisted of three laminations of stainless steel which are .025" in thickness. The laminations are held together with two "straps" of stainless steel, each 3/8 inch wide and .0125 inches thick which are spot welded to one of the laminations. The screws are made of stainless steel, approximately 1/2 inch long and approximately 3/16 inches in diameter.

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The switch was examined and no visible signs of damage were noticed. It is believed, therefore, that the screws vibrated loose and "backed out" of the shaft they were screwed into, allowing the paddle and the screws to fall free into the four inch line, 2-2314-4".

Five possible flow paths exist, three of which require passage of the pieces through the HPCI pumps:

1) through lines 2314-4" and 2315-4" to the pump suction,
2) through lines 2314-4" and 2315-4" to the condensate return to storage line 2342-12",
3) through the pumps and line 2304-14" to line 2340-4" and through this line to the torus,
4) through the pumps and line 2304-14" to line 2342-12" and through this line or the bypass line, 2353-8", to the condensate storage system, and
5) through the pumps and line 2304-14" to the vessel.

Possibility #5, above, was not considered probable since only one injection during startup testing was performed and it is very unlikely that the parts could have gotten to the vessel or they could be in a position to ever get into the vessel.

An examination of the piping and components in the other four possible flow paths from the switch location was initiated. Radiographs of the following components were made, with no success in locating the missing pieces: 4 inch tee where line 2-2314-4" joins line 2-2315-4"; 4 inch gate valve MO-2-2301-48 in line 2-2315-4" upstream of the HPCI pumps' suction; the 4" x 2" reducer, one 2" 90° elbow, and two 2" 45° elbows in line 2-2315-4" upstream of the HPCI pumps' suction; and the 4" 90° elbow at the bottom of a vertical piping run upstream of check valve 2-2301-21.

Disassembly and visual inspection of the following components and piping was also made with no success in locating the missing parts: flow switch 2-2379 and the piping upstream and downstream of it; 4" check valve 2-2301-75 and a 4" blind flanged tee in line 2-2314-4" and the piping upstream and downstream of them; 4" check valve 2-2301-21; restricting orifice RO-2-2301-22 in line 2-2353-8" and the piping downstream and upstream of it, including valve 2-2301-13; 12" check valve 2-2301-11 in line 2-2342-12" and the line between valves MO-2-2301-10 and MO-2-2301-15; and 4" check valve 2-2301-40 in line 2-2340-4" and the line downstream and upstream to valve MO-2-2301-14.

Corrective Action

An investigation is underway to determine any possible effects of leaving the pieces in the system. Since only one HPCI injection has ever been

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performed. The most likely location of the missing parts is in the test lines to the condensate storage system.

This type of switch will be replaced in the near future by a yet undetermined type. Until then, all switches of this type on Unit #2 will be inspected and the ends of the mounting screws will be "peened over" to prevent them from vibrating out.

Sincerely,

W. P. Worden

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WPW:sds