

Certified By \_\_\_\_\_



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Engineered Products Group  
Nuclear/Marine/Process

AUGUST 29, 1984

UNITED STATES NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT, REGION 1

SUBJECT: INITIAL NOTIFICATION OF "10CFR21" REPORT

PAUL-MUNROE WAS ADVISED BY BECHTEL POWER CORPORATION AND PHILADELPHIA ELECTRIC COMPANY OF PROBLEMS IN THE OPERATION OF THE VALVE OPERATOR SYSTEMS AS APPLIED IN THE LIMERICK GENERATING STATION. SPECIFICALLY, ON SEVERAL OF THE VALVE OPERATORS, IT WAS OBSERVED THAT THE HYDRAYLIC OIL PUMP WHICH MAINTAINS ACCUMULATOR PRESSURE WAS FUNCTIONING MORE FREQUENTLY THAN CALLED FOR IN THE OPERATING AND MAINTENANCE MANUAL.

AS A RESULT OF PAUL-MUNROE'S INVESTIGATION OF THIS PROBLEM TO DATE, IT HAS BEEN DETERMINED AT THIS TIME THAT THE FREQUENT CYCLING IS CAUSED BY A PRESSURE DROP RESULTING FROM LEAKAGE OCCURRING ON ANY ONE OF THREE COMPONENTS:

- SOLENOID VALVES

THE VALVE SEATS ON THESE "ZERO LEAKS" SOLENOID OPERATED, DIRECTIONAL CONTROL VALVES WERE DAMAGED THROUGH MICROSCOPIC ABRASION OR EROSION WITH THE RESULT THAT LEAKAGE WAS OBSERVED.

- ACTUATORS

PREMATURE ABRASION AND FAILURE OF THE PISTON SEAL ALLOWED LEAKAGE PAST THE PISTON.

- ACCUMULATORS

LEAKAGE HAS BEEN OBSERVED IN THE END CAP AREA.

ALTHOUGH THE ABOVE FINDINGS ARE THE RESULT OF CONSIDERABLE INVESTIGATION, CONTINUING ANALYSIS IS UNDERWAY TO DETERMINE IF THERE ARE ADDITIONAL CONTRIBUTING FACTORS FROM ENVIRONMENTAL CONDITIONS, INSTALLATION PROCEDURES OR MAINTENANCE PROCEDURES.

TECHNICAL SOLUTIONS TO THESE LEAKAGE PROBLEMS ARE PRESENTLY BEING DEVELOPED AND PAUL-MUNROE IS CONTINUING TO SUPPORT BECHTEL AND PHILADELPHIA ELECTRIC IN THIS EFFORT. AS REQUIRED BY REGULATION, A FULL WRITTEN REPORT WILL FOLLOW.

PAUL-MUNROE HYDRAULICS, INC.

F.U. ERLACH, VICE PRESIDENT

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S PDR

CC: O.C. BROWN, BECHTEL POWER CORPORATION  
E.C. KISTNER, PHILADELPHIA ELECTRIC COMPANY

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