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FBI JAMES P O'REILLY, DIRECTOR

DIRECTORATE OF REGULATORY OPERATIONS

REGION 1

US ATOMIC ENERGY COMMISSION

631 PARK AVENUE

KING OF PRUSSIA, PENNSYLVANIA 19406

SUBJECT: ABNORMAL OCCURRENCE 74-1, UNCONTROLLED OR
UNANTICIPATED CHANGES IN REACTIVITY OF
GREATER THAN 1/ DELTA K/K

IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION 6.6.2A, ABNORMAL
OCCURRENCE REPORTS, WHICH REQUIRES NOTIFICATION BY TELEPHONE AND

TELEGRAPH. THE FOLLOWING REPORT IS SUBMITTED:

ON FRIDAY, JANUARY 18, 1974 WORKMEN REMOVED THE MANWAY COVER AND
THE MANWAY INSERT FROM THE "A" STEAM GENERATOR HOT LEG SECTION. AN
AIR FAN WAS INSTALLED ON THE REACTOR VESSEL HEAD VENT AND WAS
PULLING AIR THROUGH THE PRESSURIZER VENT, THROUGH THE LOOPS (THE WATE
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LEVEL IN THE LOOPS WAS BEING MAINTAINED IN ACCORDANCE WITH APPROVED
PROCEDURES) AND DISCHARGING TO THE CONTAINMENT EXHAUST DUCT.

AS THE "A" STEAM GENERATOR HOT LEG INSERT WAS REMOVED, THERE
WAS AN IN-RUSH OF AIR TO THE "A" STEAM GENERATOR. THIS IN-RUSH OF AI
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CAUSED AN UMBALANCE OF THE WATER THAT WAS STILL IN THE STEAM GENERATO
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TUBES, AND THIS WATER THEN DRAINED INTO THE LOOPS AND DILUTED THE

WATER IN THE REACTOR.

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THE REACTOR COOLANT SYSTEM WATER WAS APPROXIMATELY 400 PPM BORON WHEN THE UNIT WAS REMOVED FROM SERVICE ON JANUARY 1, 1974. ON JANUARY 2, 1974 THE REACTOR COOLANT SYSTEM WAS BORATED TO A HOT SHUTDOWN CONDITION - 667 PPM BORON.

LATER ON WHEN IT WAS DECIDED TO GO TO A COLD SHUTDOWN CONDITION, THE REACTOR COOLANT SYSTEM WAS BORATED TO 913 PPM BORON. THE RESIDUAL HEAT REMOVAL SYSTEM WAS IN OPERATION MAINTAINING THE COLD SHUTDOWN CONDITION.

WHEN IT BECAME APPARENT THAT THE UNIT WOULD BE DOWN FOR SEVERAL WEEKS, THE OPERATORS WERE TOLD TO INCREASE THE BORON CONCENTRATION TO GREATER THAN 2,000 PPM IN ANTICIPATION OF A REFUELING OUTAGE.

THE STEAM GENERATORS HAD BURPED SEVERAL TIMES AFTER THE PRIMARY SYSTEM WATER LEVEL WAS LOWERED TO A LEVEL IN ACCORDANCE WITH THE

PROCEDURE, BUT EVIDENTLY A LARGE AMOUNT OF 913 PPM BORON WATER WAS STILL IN THE STEAM GENERATOR TUBES WHEN THE RESIDUAL HEAT REMOVAL SYSTEM WAS PLACED IN OPERATION. THE RESIDUAL HEAT REMOVAL SYSTEM TAKES ITS SUCTION FROM THE "A" MAIN COOLANT LOOP HOT LEG AND RETURNS THE WATER TO THE "B" MAIN COOLANT LOOP COLD LEG. THIS EFFECTIVELY CIRCULATES AND MIXES THE WATER IN THE REACTOR, BUT IT DOES NOT CIRCULATE WATER THROUGH THE STEAM GENERATOR. THEREFORE, WHEN THE 913 PPM BORON WATER IN THE STEAM GENERATOR DRAINED TO THE LOOPS, IT DILUTED THE 2,123 PPM WATER THAT WAS BEING CIRCULATED THROUGH THE REACTOR, RESULTING IN A FINAL BORON CONCENTRATION OF 1,863 PPM WATER CIRCULATING THROUGH THE REACTOR. THIS WAS A CHANGE IN REACTIVITY OF APPROXIMATELY 3%, WHICH WAS GREATER THAN OUR TECHNICAL SPECIFICATION LIMIT OF 1% UNCONTROLLED OR UNANTICIPATED CHANGE IN REACTIVITY. THERE WERE NO SAFETY IMPLICATIONS OF THE INCIDENT BECAUSE

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IT ONLY REDUCED OUR SHUTDOWN MARGIN FROM APPROXIMATELY 16% TO 13%. BORATION WAS STARTED IMMEDIATELY BY THE OPERATORS, AND 2 HOURS LATER THE BORON CONCENTRATION IN THE REACTOR COOLANT SYSTEM WAS BACK TO 2108 PPM.

CHARLES E PLATT, SUPERINTENDENT
GINNA STATION
ROCHESTER GAS & ELECTRIC CORP.
NNNNM

MEMO ROUTE SLIP Form AEC-93 (Rev. May 14, 1947) AECM 0240		See me about this. Note and return.	For concurrence. For signature.	For action. <input checked="" type="checkbox"/> For information.
TO (Name and unit) RO Chief, FS&EB RO:HQ (4) RO Files DR Central Files Directorate of	INITIALS	REMARKS ROCHESTER GAS AND ELECTRIC		
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TO (Name and unit) Licensing (4) OGC	INITIALS	REMARKS The above AO is forwarded for information.		
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FROM (Name and unit) <i>E. J. Brunner</i> E. J. Brunner Region I	REMARKS			
PHONE NO. 8-337-1246	DATE 1/29/74			

USE OTHER SIDE FOR ADDITIONAL REMARKS

GPO : 1971 O - 445-469

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