



Commonwealth Edison
 One First National Plaza, Chicago, Illinois
 Address Reply to: Post Office Box 767
 Chicago, Illinois 60690

May 21, 1984

Mr. Harold R. Denton, Director
 Office of Nuclear Reactor Regulation
 U.S. Nuclear Regulatory Commission
 Washington, DC 20555

Subject: Dresden Station Units 2 and 3
 Quad Cities Station Units 1 and 2.
 Justification for Continued Operation
 Environmental Qualification of
 Electrical Equipment
 NRC Docket Nos. 50-237, 50-249, 59-254
 and 50-265

References (a): B. Rybak letter to H. R. Denton dated
 May 19, 1983.

(b): B. Rybak letter to H. R. Denton dated
 March 30, 1984.

Dear Mr. Denton:

During your staff's review of the environmental qualification of electrical equipment for both Dresden Units 2 and 3 and Quad Cities Units 1 and 2 they had verbally requested Commonwealth Edison to resubmit the currently applicable justifications for continued operation (JCOs). Although all JCOs were submitted previously we agree that the list needed to be updated to delete those JCOs that are no longer required due to equipment qualification in the intervening period.

Therefore, in the form of attachments to this letter, we are enclosing the JCOs for all four units. These JCOs are current as of May 1, 1984.

If you have any questions regarding this matter, please contact this office.

One signed original and sixty (60) copies of this letter and its attachments are provided for your use.

Very truly yours,

B. Rybak
 Nuclear Licensing Administrator

lm

cc: NRC Resident Inspector - Dresden
 NRC Resident Inspector - Quad Cities
 R. Gilbert - NRR
 R. Bevan - NRR

Attachments

8405300130 840521
 PDR ADOCK 05000237
 PDR

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QUAD CITIES STATION UNIT 1

Justification for Continued Operation

May 21, 1984

8668N

APPLICABLE JUSTIFICATIONS FOR CONTINUED OPERATION

LIST OF EQUIPMENT NOT PRESENTLY QUALIFIED FOR QUAD CITIES UNIT 1

<u>Plant Identification</u>	<u>Component Description</u>	<u>TER Number</u>	<u>Continued Operation is Justified for the Following Reason</u>
<u>SYSTEM:</u> Reactor Protection (Appendix D.1.1 of IE Bulletin 79-01B Response)			
TE-1-1291-60A through H	Temperature element	1	<ul style="list-style-type: none">A. The design temperature range of this instrument envelops the accident conditions.B. The actual radiation exposure of the devices for accident conditions is below radiation damage threshold of the most susceptible subcomponent.C. The annunciation function is complete prior to exposure to a harsh environment; subsequent failure of this equipment would not mislead the operator.D. Alternative means of leak detection are available utilizing existing pressure, temperature, and flow instruments and alarms in the RWCU system.E. Automatic isolation for high nonregenerative heat exchanger outlet temperature would result if a break should occur downstream of the nonregenerative heat exchanger.

List of Equipment Not Presently Qualified for Quad Cities Unit 1 (continued)

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: Core Spray (Appendix D.1.2 of IE Bulletin 79-01B Response)

FS-1-1464A,B	Flow switch	11	These switches control the minimum flow valve in the core spray system. Failure of these switches, either closing or opening the minimum flow valve, will not result in failure of the core spray system to deliver the required minimum flow to the core.
MO-1-1402-24A,B; MO-1-1402-25A,B	Motor-operated gate valve	7	<p>A. The source terms utilized as a basis for radiation dose calculations are extremely conservative. As a result, the calculated doses to these valves are conservative bounding values that are not expected to be reached during a realistic accident.</p> <p>B. These components undergo functional testing to verify operability. This testing would identify age-related degradation.</p> <p>C. Other equipment similar in design to this equipment has successfully been qualified for environments in excess of the calculated requirement for this equipment.</p>
MO-1-1402-38A,B	Motor-operated gate valve	8	This valve opens on low flow to provide a minimum flow line. Failure of this valve to open will not reduce core cooling flow. Should the valve fail in the open position, coolant injection would be reduced but would still meet the technical specification requirements for minimum flow to the core.

List of Equipment Not Presently Qualified for Quad Cities Unit 1 (continued)

<u>Plant Identification</u>	<u>Component Description</u>	<u>TER Number</u>	<u>Continued Operation is Justified for the Following Reason</u>
<u>SYSTEM: High-Pressure Coolant Injection (Appendix D.1.3 of IE Bulletin 79-01B Response)</u>			
DPIS-1-2352, -2353	Differential pressure indicating switch	None	A. This component completes its function in a very short period of time and would not be significantly affected by increased environmental conditions in this period. B. There are additional components that would be capable of providing the same isolation.
MO-1-2301-4	Motor-operated gate valve	13	This valve is located inside drywell and is normally open. Following a postulated accident, it would remain open to allow steam flow to the HPCI turbine. Valve operation would only be required to isolate the HPCI steam line. Three additional valves are located on this steam line outside drywell to isolate the steam line. Because the harsh environment inside drywell is associated with an accident that would not affect environments or HPCI steam line pipe integrity outside drywell, the three outside drywell valves would be capable of isolating the steam line. This component undergoes periodic functional testing to verify operability. This testing would identify age-related degradation.
PS-1-2389A through D	Pressure switch	None	A. This component completes its function in a very short period of time and would not be significantly affected by increased environmental conditions in this period. B. There are additional components that would be capable of providing the same isolation.
TS-1-2370A through D, TS-1-2371A through D, TS-1-2372A through D, TS-1-2373A through D	Temperature switch	15	Periodic calibration performed on these components in accordance with calibration Procedure QIS-27 would justify that these are operational during the required service conditions. The maximum operating temperature of the switches by design is 370F, which is above the required operating temperature.

List of Equipment Not Presently Qualified for Quad Cities Unit 1 (continued)

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: Auto Depressurization/Main Steam (Appendix D.1.4 of IE Bulletin 79-01B Response)

1-203-3B through E	Electromatic relief valve	18	The number of actuations to which the tested component was subjected during the test was considerably larger than the number of actuations required during the 12 days following the accident. Additionally, these units remained functional during the June 5, 1970, depressurization incident at Dresden Unit 2. This incident resulted in harsh environmental conditions.
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List of Equipment Not Presently Qualified for Quad Cities Unit 1 (continued)

<u>Plant Identification</u>	<u>Component Description</u>	<u>TER Number</u>	<u>Continued Operation is Justified for the Following Reason</u>
<u>SYSTEM:</u> Residual Heat Removal (Appendix D.1.5 of IE Bulletin 79-01B Response)			
DPIS-1-1001-81A,B	Differential pressure indicating switch	32	This switch opens/closes the minimum flow line. Failure of this switch can be overridden by operator action and, therefore, will not adversely affect safety.
DPIS-1-1001-78A,B	Differential pressure switch	35	This component provides an alarm only. Differential pressure across the RHR heat exchanger is manually controlled. Therefore, failure of the alarm will not affect plant operation nor mislead the operator because RHR pressure and RHR service water pressure are monitored to manually control proper differential pressure.
MO-1-1001-23A,B; MO-1-1001-26A,B; MO-1-1001-29A,B; MO-1-1001-5A,B	Motor-operated gate valve Motor-operated globe valve	26 6 24 23	A. The source terms utilized as a basis for radiation dose calculations are extremely conservative. As a result, the calculated doses to these valves are conservative bounding values that are not expected to be reached during a realistic accident. B. These components undergo functional testing to verify operability. This testing would identify age-related degradation. C. Other equipment similar in design to this equipment has been successfully qualified for environments in excess of the calculated requirement for this equipment.
MO-1-1001-63	Motor-operated gate valve	28	A. Similar items have been partially tested for environmental conditions. B. Identical components remained functional during the June 5, 1970, depressurization incident at Dresden Unit 2. This incident resulted in harsh environmental conditions. C. This component undergoes periodic functional testing to verify operability. This testing would identify age-related degradation.

List of Equipment Not Presently Qualified for Quad Cities Unit 1 (continued)

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: Pressure Suppression (Appendix D.1.6 of IE Bulletin 79-01B Response)

PS-1-1622A,B	Pressure switch	21	A. An alternative flowpath through the SGTS is available to relieve torus vacuum. B. Failure of these switches could be resolved by operator actuation of the 1601-20A,B valves.
SO-1-1601-50A,B	Solenoid valve	47	An alternative flowpath is available through the SGTS to relieve torus vacuum in the event these components should fail.

SYSTEM: Standby Gas Treatment System (Appendix D.1.7 of IE Bulletin 79-01B Response)

FSL-1/2-7541-33A,B	Flow switch, low	63	This is a low flow switch used to start the standby train. The standby train can be manually started if the switch fails.
FSL-1/2-7541-8A,B	Flow switch, low	63	This is a low flow switch used to trip the SGTS air heater on low flow. Because radiation is the only harsh environment, failure of the switch due to radiation buildup on the SGTS filters would not be significant because, at those radiation levels, the heat generated in the charcoal would be sufficient to provide some inlet air humidity reduction.
MO-1/2-7504A,B	Motor-operated damper	None	A. These dampers close on SGTS train startup. Failure to close will not prevent sufficient suction in the primary train from the reactor building. B. These dampers complete their function in a very short period of time and will not experience significant effects of increased environmental condition in this short time period. C. These dampers undergo periodic testing to verify operability.

List of Equipment Not Presently Qualified for Quad Cities Unit 1 (continued)

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: Standby Gas Treatment System (Appendix D.1.7 of IE Bulletin 79-01B Response) (continued)

MO-1/2-7505A,B MO-1/2-7507A,B	Motor-operated damper	None	A. These dampers are normally shut and are in a mild environment until the accident occurs. These dampers open upon initiation of train operation. Failure of one train damper to open will simply cause the alternate train to start and the other damper to open. B. These dampers complete their function in a very short period of time and will not be significantly affected by increased environmental conditions in this period. C. These dampers undergo periodic testing to verify operability.
1/2-7506A,B	Motor exhaust fan	60	These motors have Class B insulation. Other motors with Class B insulation have been tested to greater than or equal to $2E07$ rads and qualified. It is expected this insulation would not suffer radiation failure for the specified dose ($2.4E05$ rads).
2212-29A,B	Local control panel	65	This panel contains relays and a timer. The system can be operated without the timer. The relays contain bakelite and nylon. For the specified service, both are expected to perform their required function.

List of Equipment Not Presently Qualified for Quad Cities Unit 1 (continued)

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: Service Water (Appendix D.1.8 of IE Bulletin 79-01B Response)

1-5746A,B	Room cooler fan motor	37	These motors have Class B insulation. Other motors with Class B insulation have been tested to $>2.0E07$ rads and qualified. It is expected that this insulation would not suffer radiation failure for the specified dose ($5.1E05$ rads).
1-5748A,B	Room cooler fan motor	38	These motors have Class B insulation. Other motors with Class B insulation have been tested to $>2.0E07$ rads and qualified. It is expected that this insulation would suffer radiation failure for the specified dose ($1.5E05$ rads).

List of Equipment Not Presently Qualified for Quad Cities Unit 1 (continued)

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: Containment Isolation (Appendix D.1.10 of IE Bulletin 79-01B Response)

MO-1-3706	Motor-operated gate valve	41	<ul style="list-style-type: none">A. This component is designed as a redundant pair with MO-1-3703, each separated from the other with only one subjected to a harsh environment.B. This component completes its function in a very short period of time and would not be significantly affected by increased environmental conditions in this period.C. Identical components remained functional during the June 5, 1970, depressurization incident at Dresden Unit 2. This incident resulted in harsh environmental conditions.
MO-1-220-1	Motor-operated globe valve	19	<ul style="list-style-type: none">A. This component is designed as a redundant pair with MO-1-220-2, each separated from the other with only one subjected to a harsh environment.B. This component completes its function in a very short period of time and would not be significantly affected by increased environmental conditions in this period.C. This component undergoes periodic functional testing to verify operability. This testing would identify age-related degradation.D. Identical components remained functional during the June 5, 1970, depressurization incident at Dresden Unit 2.E. Other valves are available on the main steam line drain lines to perform the isolation function should valve MO-1-220-1 fail to close.
SO-1-203-1A through D, SO-1-203-2A through D	Solenoid for MSIV air operator	16	<ul style="list-style-type: none">A. These components are designed as redundant pairs, each separated from the other.B. These components complete their function in a very short period of time and would not be significantly affected by increased environmental conditions in this period.C. These components undergo periodic functional testing to verify operability. This testing would identify age-related degradation.D. Operator action to cut the air supply to the solenoids would require closure of the MSIVs.

List of Equipment Not Presently Qualified for Quad Cities Unit 1 (continued)

<u>Plant Identification</u>	<u>Component Description</u>	<u>TER Number</u>	<u>Continued Operation is Justified for the Following Reason</u>
<u>SYSTEM: Reactor Recirculation (Appendix D.1.12 of IE Bulletin 79-01B Response)</u>			
LIS-1-263-58A,B	Level indicating switch	42	Redundant instruments (LIS-1-263-57A,B) are available to provide scram and isolation on low level, and they are located in a mild environment.
LITS-1-263-73A,B	Level indicating transmitter switch	42	These switches provide an interlock for containment spray initiation. Other level instruments are available to provide the same information and, if required, operator action to override these instruments could be taken. Additionally, if these switches fail, the safety analysis would not be affected because no credit was taken for containment spray operation in the safety analysis.
MO-1-202-5A,B	Motor-operated gate valve and brake	46	A. Similar components have been qualified for these environmental conditions. B. These components complete their function in a very short period of time and would not be significantly affected by increased environmental conditions in this period. C. Identical components remained functional during the June 5, 1970, depressurization incident at Dresden Unit 2. This incident resulted in harsh environmental conditions. D. Failure of these valves would not compromise the operation of the ECCS. E. Each component undergoes periodic functional testing to verify operability. This testing would identify age-related degradation.
POS-1-220-44, POS-1-220-45	Position switch	58 None	This component provides indication only. Its failure would not affect safety circuits or mislead the operator.

List of Equipment Not Presently Qualified for Quad Cities Unit 1 (continued)

<u>Plant Identification</u>	<u>Component Description</u>	<u>TER Number</u>	<u>Continued Operation is Justified for the Following Reason</u>
SYSTEM: Reactor Core Isolation Cooling (Appendix D.1.18 of IE Bulletin 79-01B Response)			
MO-1-1301-16	Motor-operated gate valve	None	<p>A. This component is designed as a redundant pair with MO-1-1301-17, each separated from the other with only one subjected to a harsh environment.</p> <p>B. This component completes its function in a very short period of time and would not be significantly affected by increased environmental conditions in this period.</p> <p>C. Identical components remained functional during the June 5, 1970, depressurization incident at Dresden Unit 2. This incident resulted in harsh environmental conditions.</p> <p>D. Each component undergoes periodic functional testing to verify operability. This testing would identify age-related degradation.</p>
SYSTEM: General-Use Electrical Equipment (Appendix D.1.19 of IE Bulletin 79-01B Response)			
Cable	XLPE insulation with polyvinyl chloride jacket	53	<p>A. Similar items have been successfully qualified for required environmental conditions.</p> <p>B. Identical components remained functional during the June 5, 1970, depressurization incident at the Dresden Unit 2. This incident resulted in harsh environmental conditions.</p>
79-01B-1 through 8 DW-203-3A 1RB-166 through -169 1TB-63 through -66 None	Terminal blocks (typical both units)	57	<p>A. Similar items have been partially tested for environmental conditions.</p> <p>B. Identical components remained functional during the June 5, 1970, depressurization incident at Dresden Unit 2. This incident resulted in harsh environmental conditions.</p>

DRESDEN STATION UNIT 2

Justification for Continued Operation

May 21, 1984

8668N

APPLICABLE JUSTIFICATIONS FOR CONTINUED OPERATION

LIST OF EQUIPMENT NOT PRESENTLY QUALIFIED FOR DRESDEN UNIT 2

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: Reactor Protection (Appendix F.1 of IE Bulletin 79-01B Response)

TE-2-1291-60A through H	Temperature element	53	<ul style="list-style-type: none"> A. The design temperature range of this instrument envelops the accident conditions. B. The actual radiation exposure of the devices for accident conditions is below radiation damage threshold of the most susceptible subcomponent. C. The annunciation function is complete prior to exposure to a harsh environment; subsequent failure of this equipment would not mislead the operator. D. Alternative means of leak detection are available utilizing existing pressure, temperature, and flow instruments and alarms in the RWCU system. E. Automatic isolation for high nonregenerative heat exchanger outlet temperature would result if a break should occur downstream of the nonregenerative heat exchanger.
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SYSTEM: Core Spray (Appendix F.2 of IE Bulletin 79-01B Response)

FS-2-1464A,B	Flow switch	64	These switches control the minimum flow valve in the core spray system. Failure of these switches, either closing or opening the minimum flow valve, will not result in failure of the core spray system to deliver the required minimum flow to the core.
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SYSTEM: High-Pressure Coolant Injection (Appendix F.3 of IE Bulletin 79-01B Response)

DPIS-2-2352, -2353	Differential pressure indicating switch	None	<ul style="list-style-type: none"> A. This component completes its function in a very short period of time and would not be significantly affected by increased environmental conditions in this period. B. There are additional components that would be capable of providing the same isolation.
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List of Equipment Not Presently Qualified for Dresden Unit 2 (continued)

<u>Plant Identification</u>	<u>Component Description</u>	<u>TER Number</u>	<u>Continued Operation is Justified for the Following Reason</u>
<u>SYSTEM: High-Pressure Coolant Injection (Appendix F.3 of IE Bulletin 79-01B Response) (continued)</u>			
MO-2-2301-4	Motor-operated gate valve	13	This valve is located inside drywell and is normally open. Following a postulated accident, it would remain open to allow steam flow to the HPCI turbine. Valve operation would only be required to isolate the HPCI steam line. Three additional valves are located on this steam line outside drywell to isolate the steam line. Because the harsh environment inside drywell is associated with an accident that would not affect environments or HPCI steam line pipe integrity outside drywell, the three outside drywell valves would be capable of isolating the steam line. This component undergoes periodic functional testing to verify operability. This testing would identify age-related degradation.
PS-2-2389A through D	Pressure switch	None	A. This component completes its function in a very short period of time and would not be significantly affected by increased environmental condition in this period. B. There are additional components that would be capable of providing the same isolation.
TS-2-2370A through D, TS-2-2371A through D, TS-2-2372A through D, TS-2-2373A through D	Temperature switch	50	Periodic calibration performed on these components in accordance with calibration Procedure DIS-2300-7 would justify that these are operational during the required service conditions. The maximum operating temperature the switches by design is 425F, which is above the required operating temperature.

List of Equipment Not Presently Qualified for Dresden Unit 2 (continued)

<u>Plant Identification</u>	<u>Component Description</u>	<u>TER Number</u>	<u>Continued Operation is Justified for the Following Reason</u>
<u>SYSTEM:</u> Auto Depressurization/Main Steam (Appendix F.4 of IE Bulletin 79-01B Response)			
TS-2-261-15A through D, TS-2-261-16A through D, TS-2-261-17A through D, TS-2-261-18A through D	Temperature switch	51	Periodic calibration in accordance with calibration Procedure DIS-2300-7 is performed on these components, which would justify that these are operational during the required service conditions. The maximum operating temperature of the switches by design is 425F, which is above the required operating temperature. As soon as steam line break occurs, the sensors detect high temperature, and their function is complete.
2-203-3B through E	Electromatic relief valve	48	The number of actuations to which the tested component was subjected during the test was considerably larger than the number of actuations required during the 12 days following the accident. Additionally, these units remained functional during the June 5, 1970, depressurization incident. This incident produced harsh environmental conditions.
<u>SYSTEM:</u> Low-Pressure Coolant Injection (Appendix F.5 of IE Bulletin 79-01B Response)			
DPS-2-1501-55A,B	Differential pressure switch	None	These components are required to establish containment cooling flow and provide automatic pressure control. In the event of failure of these components, the operator could manually control containment cooling to service water differential pressure. Therefore, there are no adverse effects resulting from failure of these components.
FS-2-1501-58A,B	Flow switch	65	These components provide information only. Failure of these switches would not affect safety equipment operation.

List of Equipment Not Presently Qualified for Dresden Unit 2 (continued)

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: Pressure Suppression (Appendix F.6 of IE Bulletin 79-01B Response)

DPIS-2-1622A,B	Differential pressure indicating switch	62	A. An alternative flowpath through the SGTS is available to relieve torus vacuum. B. Failure of these switches could be resolved by operator actuation of the 1601-20A,B valves.
LT-2-1641-1	Level transmitter	70	This component provides indication only. Failure of this transmitter would not affect safety equipment operation.
SO-2-1601-50A,B	Solenoid valve	46	An alternative flowpath is available through the SGTS to relieve torus vacuum in the event these components should fail.

List of Equipment Not Presently Qualified for Dresden Unit 2 (continued)

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: Standby Gas Treatment System (Appendix F.7 of IE Bulletin 79-01B Response)

FSL-2/3-7541-41A,B	Flow switch, low	63	This is a low flow switch used to trip the SGTS air heater on low flow. Because radiation is the only harsh environment, failure of the switch due to radiation buildup on the SGTS filters would not be significant because, at those radiation levels, the heat generated in the charcoal would be sufficient to provide some inlet air humidity reduction.
FS-2/3-7541-45A,B	Flow switch	66	This switch is used to automatically select one of the two standby gas treatment trains for service. Failure of this switch would not adversely affect safety because the operator could manually select one of the two trains.
2223-28A,B	Local panels	81	These panels contain relays and a timer. The system can be operated without the timer. The relays contain bakelite and nylon. For the specified service, both are expected to perform in the specified environment.
2223-29A,B	Local panels	None	These panels contain relays. The relays contain bakelite and nylon. For the specified service, both are expected to perform in the specified environment.
2/3-7506A,B	Motor exhaust fan	85	These motors have Class B insulation and other motors with Class B insulation have been tested to >2.0E07 rads and qualified. It is expected that this insulation would not suffer radiation failure for the specified dose (1.2E06 rads).

SYSTEM: Service Water (Appendix F.8 of IE Bulletin 79-01B Response)

2-5746A,B	Reactor building emergency air cooler	86	These motors have Class B insulation. Other motors with Class B insulation have been tested to >2.0E07 rads and qualified. It is expected that this insulation would not suffer radiation failure for the specified dose (3.4E06 rads).
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List of Equipment Not Presently Qualified for Dresden Unit 2 (continued)

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: Containment Isolation (Appendix F.10 of IE Bulletin 79-01B Response)

SO-2-203-1A through D,	Solenoid for MSIV air	44	A.	These components are designed as redundant pairs, each separated from the other.
SO-2-203-2A through D	operator	45	B.	These components complete their function in a very short period of time and would not be significantly affected by increased environmental conditions in this period.
			C.	These components undergo periodic functional testing to verify operability. This testing would identify age-related degradation.
			D.	Operator action to cut the air supply to the solenoids would require closure of the MSIVs.

SYSTEM: Reactor Recirculation (Appendix F.12 of IE Bulletin 79-01B Response)

LIS-2-263-58A,B	Level indicating switch	None		Redundant instruments (LIS-2-263-57A,B) are available to provide scram and isolation on low level, and they are located in a mild environment.
LITS-2-263-73A,B	Level indicating transmitter switch	71		These switches provide an interlock for containment spray initiation. Other level instruments are available to provide the same information and, if required, operator action to override these instruments could be taken. Additionally, if these switches fail, the safety analysis would not be affected because no credit was taken for containment spray operation in the safety analysis.
MO-2-202-5A,B	Motor-operated gate valve	15	A.	Similar components have been qualified for these environmental conditions.
			B.	These components complete their function in a very short period of time and would not be significantly affected by increased environmental conditions in this period.
			C.	Identical components remained functional during the June 5, 1970, depressurization incident at Dresden Unit 2. This incident resulted in harsh environmental conditions.
			D.	Failure of these valves would not compromise the operation of the ECCS.

List of Equipment Not Presently Qualified for Dresden Unit 2 (continued)

<u>Plant Identification</u>	<u>Component Description</u>	<u>TER Number</u>	<u>Continued Operation is Justified for the Following Reason</u>
MO-2-202-5A,B (continued)			E. This component undergoes periodic functional testing to verify operability. This testing would identify age-related degradation.
POS-2-220-44, POS-2-220-45	Position switch	57	This component provides indication only. Its failure would not affect safety circuits or mislead the operator.
SO-2-220-45	Solenoid valve	43	This component is one of a redundant series pair, each separated from the other. This component completes its function in a very short period of time and would not be significantly affected by harsh environmental conditions in this period.

SYSTEM: General-Use Electrical Equipment (Appendix F.19 of IE Bulletin 79-01B Response)

79-01B-14 through -21	Terminal blocks	100	Similar items have been partially tested for environmental conditions. These components remained functional during the June 5, 1970, depressurization incident at Dresden Unit 2. This incident resulted in harsh environmental conditions.
2TB-63 through -66		101	
2TB-115		None	
2TB-130			
2TB-255			
Cable	XLPE insulation with polyvinyl chloride jacket	None	Similar items have been partially tested for equivalent environmental conditions. These cables remained functional during the June 5, 1970, depressurization incident. This incident resulted in harsh environmental conditions.

DRESDEN STATION UNIT 3

Justification for Continued Operation

May 21, 1984

8668N

APPLICABLE JUSTIFICATIONS FOR CONTINUED OPERATION

LIST OF EQUIPMENT NOT PRESENTLY QUALIFIED FOR DRESDEN UNIT 3

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: Reactor Protection (Appendix D.1 of IE Bulletin 79-01B Response)

TE-3-1291-60A through H	Temperature element	36	<ul style="list-style-type: none">A. The design temperature range of this instrument envelops the accident conditions.B. The actual radiation exposure of the devices for accident conditions is below radiation damage threshold of the most susceptible subcomponent.C. The annunciation function is complete prior to exposure to a harsh environment; subsequent failure of this equipment would not mislead the operator.D. Alternative means of leak detection are available utilizing existing pressure, temperature, and flow instruments, and alarms in the RWCU system.E. Automatic isolation for high nonregenerative heat exchanger outlet temperature would result if a break should occur downstream of the nonregenerative heat exchanger.
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SYSTEM: Core Spray (Appendix D.2 of IE Bulletin 79-01B Response)

FS-3-1464A,B	Flow switch	38	These switches control the minimum flow valve in the core spray system. Failure of these switches, either closing or opening the minimum flow valve, will not result in failure of the core spray system to deliver the required minimum flow to the core.
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List of Equipment Not Presently Qualified for Dresden Unit 3 (continued)

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: High-Pressure Coolant Injection (Appendix D.3 of IE Bulletin 79-01B Response)

DPIS-3-2352, -2353	Differential pressure indicating switch	None	A. This component completes its function in a very short period of time and would not be significantly affected by increased environmental conditions in this period. B. There are additional components that would be capable of providing the same isolation.
PS-3-2389A through D	Pressure switch	None	A. This component completes its function in a very short period of time and would not be significantly affected by increased environmental conditions in this period. B. There are additional components that would be capable of providing the same isolation.
TS-3-2370A through D, TS-3-2371A through D, TS-3-2372A through D, TS-3-2373A through D	Temperature switch	43	Periodic calibration performed on these components in accordance with calibration Procedure DIS-2300-7 would justify that these are operational during the required service conditions. The maximum operating temperature of the switches by design is 425F, which is above the required operating temperature.

SYSTEM: Auto Depressurization/Main Steam (Appendix D.4 of IE Bulletin 79-01B Response)

TS-3-261-15A through D, TS-3-261-16A through D, TS-3-261-17A through D, TS-3-261-18A through D	Temperature switch	44	Periodic calibration in accordance with calibration Procedure DIS-2300-7 is performed on these components, which would justify that these are operational during the required service conditions. The maximum operating temperature of the switches by design is 425F, which is above the required operating temperature. As soon as steam line break occurs, the sensors detect high temperature, and their function is complete.
3-203-3B through E	Electromatic relief valve	34	The number of actuations to which the tested component was subjected during the test was considerably larger than the number of actuations required during the 12 days following the accident. Additionally, identical units remained functional during the June 5, 1970, depressurization incident at Dresden Unit 2. This incident produced harsh environmental conditions.

List of Equipment Not Presently Qualified for Dresden Unit 3 (continued)

<u>Plant Identification</u>	<u>Component Description</u>	<u>TER Number</u>	<u>Continued Operation is Justified for the Following Reason</u>
<u>SYSTEM: Low-Pressure Coolant Injection (Appendix D.5 of IE Bulletin 79-01B Response)</u>			
DPS-3-1501-55A,B	Differential pressure switch	None	These components are required to establish containment cooling flow and provide automatic pressure control. In the event of failure of these components, the operator could manually control containment cooling to service water differential pressure. Therefore, there are no adverse effects resulting from failure of these components.
FS-3-1501-58A,B	Flow switch	49	These components provide information only. Failure of these switches would not affect safety equipment operation.
<u>SYSTEM: Pressure Suppression (Appendix D.6 of IE Bulletin 79-01B Response)</u>			
DPIS-3-1622A,B	Differential pressure indicating switch	50	A. An alternative flowpath through the SGTS is available to relieve torus vacuum. B. Failure of these switches could be resolved by operator actuation of the 1601-20A,B valves.
LT-3-1641-1	Level transmitter	None	This component provides indication only. Failure of this transmitter would not affect safety equipment operation.
SO-3-1601-50A,B	Solenoid valve	32	An alternative flowpath is available through the SGTS to relieve torus vacuum in the event these components should fail.
<u>SYSTEM: Service Water (Appendix D.8 of IE Bulletin 79-01B Response)</u>			
3-5746A,B	Reactor building emergency air cooler	58	These motors have Class B insulation. Other motors with Class B insulation have been tested to >2.0E07 rads and qualified. It is expected that this insulation would not suffer radiation failure for the specified dose (3.4E06 rads).

List of Equipment Not Presently Qualified for Dresden Unit 3 (continued)

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: Containment Isolation (Appendix D.10 of IE Bulletin 79-01B Response)

SO-3-203-1A through D, SO-3-203-2A through D	Solenoid for MSIV air operator	31	A. These components are designed as redundant pairs, each separated from the other. B. These components complete their function in a very short period of time and would not be significantly affected by increased environmental conditions in this period. C. These components undergo periodic functional testing to verify operability. This testing would identify age-related degradation. D. Operator action to cut the air supply to the solenoids would require closure of the MSIVs.
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List of Equipment Not Presently Qualified for Dresden Unit 3 (continued)

<u>Plant Identification</u>	<u>Component Description</u>	<u>TER Number</u>	<u>Continued Operation is Justified for the Following Reason</u>
<u>SYSTEM:</u> Reactor Recirculation (Appendix D.12 of IE Bulletin 79-01B Response)			
LIS-3-263-58A,B	Level indicating switch	59	Redundant instruments (LIS-3-263-57A,B) are available to provide scram and isolation on low level, and they are located in a mild environment.
LITS-3-263-73A,B	Level indicating transmitting switch	60	These switches provide an interlock for containment spray initiation. Other level instruments are available to provide the same information and, if required, operator action to override these instruments could be taken. Additionally, if these switches fail, the safety analysis would not be affected because no credit was taken for containment spray operation in the safety analysis.
MO-3-202-5A,B	Motor-operated gate valve	1	<ul style="list-style-type: none">A. Similar components have been qualified for these environmental conditions.B. These components complete their function in a very short period of time and would not be significantly affected by increased environmental conditions in this period.C. Identical components remained functional during the June 5, 1970, depressurization incident at Dresden Unit 2. This incident resulted in harsh environmental conditions.D. Failure of these valves would not compromise the operation of the ECCS.E. This component undergoes periodic functional testing to verify operability. This testing would identify age-related degradation.
POS-3-220-44	Position switch	None	This component provides indication only. Its failure would not affect safety circuits or mislead the operator.

List of Equipment Not Presently Qualified for Dresden Unit 3 (continued)

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: General-Use Electrical Equipment (Appendix D.19 of IE Bulletin 79-01B Response)

Cable	XLPE insulation with poly-vinyl chloride jacket	71	A. Similar items have been successfully qualified for required environmental conditions. B. Identical components remained functional during the June 5, 1970, depressurization incident at Dresden Unit 2. This incident resulted in harsh environmental conditions.
79-01B-14, 16, 18, 20 79-01B-15, 17, 19, 21	Terminal blocks	74 75	A. Similar items have been partially tested for environmental conditions.
3TB-63 through 66 3TB-88 3TB-129 3TB-181 3TB-182 3TB-218 None		None	B. Identical components remained functional during the June 5, 1970, depressurization incident at Dresden Unit 2. This incident resulted in harsh environmental conditions.

QUAD CITIES STATION UNIT 2

Justification for Continued Operation

May 21, 1984

8668N

APPLICABLE JUSTIFICATIONS FOR CONTINUED OPERATION

LIST OF EQUIPMENT NOT PRESENTLY QUALIFIED FOR QUAD CITIES UNIT 2

<u>Plant Identification</u>	<u>Component Description</u>	<u>TER Number</u>	<u>Continued Operation is Justified for the Following Reason</u>
<u>SYSTEM:</u> Reactor Protection (Appendix D.2.1 of IE Bulletin 79-01B Response)			
TE-2-1291-60A through H	Temperature element	1	<ul style="list-style-type: none">A. The design temperature range of this instrument envelops the accident conditions.B. The actual radiation exposure of the devices for accident conditions is below radiation damage threshold of the most susceptible subcomponent.C. The annunciation function is complete prior to exposure to a harsh environment; subsequent failure of this equipment would not mislead the operator.D. Alternative means of leak detection are available utilizing existing pressure, temperature, and flow instruments and alarms in the RWCU system.E. Automatic isolation for high nonregenerative heat exchanger outlet temperature would result if a break should occur downstream of the nonregenerative heat exchanger.

List of Equipment Not Presently Qualified for Quad Cities Unit 2 (continued)

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: Core Spray (Appendix D.2.2 of IE Bulletin 79-01B Response)

FS-2-1464A,B	Flow switch	11	These switches control the minimum flow valve in the core spray system. Failure of these switches, either closing or opening the minimum flow valve, will not result in failure of the core spray system to deliver the required minimum flow to the core.
MO-2-1402-24A,B; MO-2-1402-25A,B	Motor-operated gate valve	7	<p>A. The source terms utilized as a basis for radiation dose calculations are extremely conservative. As a result, the calculated doses to these valves are conservative bounding values that are not expected to be reached during a realistic accident.</p> <p>B. These components undergo functional testing to verify operability. This testing would identify age-related degradation.</p> <p>C. Other equipment similar in design to this equipment has successfully been qualified for environments in excess of the calculated requirement for this equipment.</p>
MO-2-1402-38A,B	Motor-operated gate valve	8	This valve opens on low flow to provide a minimum flow line. Failure of this valve to open will not reduce core cooling flow. Should the valve fail in the open position, coolant injection would be reduced but would still meet the technical specification requirements for minimum flow to the core.

List of Equipment Not Presently Qualified for Quad Cities Unit 2 (continued)

<u>Plant Identification</u>	<u>Component Description</u>	<u>TER Number</u>	<u>Continued Operation is Justified for the Following Reason</u>
SYSTEM: High-Pressure Coolant Injection (Appendix D.2.3 of IE Bulletin 79-01B Response)			
DPIS-2-2352, -2353	Differential pressure indicating switch	None	A. This component completes its function in a very short period of time and would not be significantly affected by increased environmental conditions in this period. B. There are additional components that would be capable of providing the same isolation.
MO-2-2301-4	Motor-operated gate valve	13	This valve is located inside drywell and is normally open. Following a postulated accident, it would remain open to allow steam flow to the HPCI turbine. Valve operation would only be required to isolate the HPCI steam line. Three additional valves are located on this steam line outside drywell to isolate the steam line. Because the harsh environment inside drywell is associated with an accident that would not affect environments or HPCI steam line pipe integrity outside drywell, the three outside drywell valves would be capable of isolating the steam line. This component undergoes periodic functional testing to verify operability. This testing would identify age-related degradation.
PS-2-2389A through D	Pressure switch	None	A. This component completes its function in a very short period of time and would not be significantly affected by increased environmental condition in this period. B. There are additional components that would be capable of providing the same isolation.
TS-2-2370A through D, TS-2-2371A through D, TS-2-2372A through D, TS-2-2373A through D	Temperature switch	15	Periodic calibration performed on these components in accordance with calibration Procedure QIS-27 would justify that these are operational during the required service conditions. The maximum operating temperature of the switches by design is 370F, which is above the required operating temperature.

List of Equipment Not Presently Qualified for Quad Cities Unit 2 (continued)

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: Auto Depressurization/Main Steam (Appendix D.2.4 of IE Bulletin 79-01B Response)

2-203-3B through E	Electromatic relief valve	18	The number of actuations to which the tested component was subjected during the test were considerably larger than the number of actuations required during the 12 days following the accident. Additionally, these units remained functional during the June 5, 1970, depressurization incident at Dresden Unit 2. This incident resulted in harsh environmental conditions.
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List of Equipment Not Presently Qualified for Quad Cities Unit 2 (continued)

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: Residual Heat Removal (Appendix D.2.5 of IE Bulletin 79-01B Response)

<u>Plant Identification</u>	<u>Component Description</u>	<u>TER Number</u>	<u>Continued Operation is Justified for the Following Reason</u>
DPIS-2-1001-81A,B	Differential pressure indicating switch	32	This switch opens/closes the minimum flow line. Failure of this switch can be overridden by operator action and, therefore, will not adversely affect safety.
DPS-2-1001-78A,B	Differential pressure switch	35	This component provides an alarm only. Differential pressure across the RHR heat exchanger is manually controlled. Therefore, failure of the alarm will not affect plant operation nor mislead the operator because RHR pressure and RHR service water pressure are monitored to manually control proper differential pressure.
MO-2-1001-23A,B; MO-2-1001-26A,B; MO-2-1001-29A,B; MO-2-1001-5A,B	Motor-operated gate valve	26 6 24 23	A. The source terms utilized as a basis for radiation dose calculations are extremely conservative. As a result, the calculated doses to these valves are conservative bounding values that are not expected to be reached during a realistic accident. B. These components undergo functional testing to verify operability. This testing would identify age-related degradation. C. Other equipment similar in design to this equipment has been successfully qualified for environments in excess of the calculated requirement for this equipment.
MO-2-1001-63	Motor-operated gate valve	28	A. Similar items have been partially tested for environmental conditions. B. Identical components remained functional during the June 5, 1970, depressurization incident at Dresden Unit 2. This incident resulted in harsh environmental conditions. C. This component undergoes periodic functional testing to verify operability. This testing would identify age-related degradation.

List of Equipment Not Presently Qualified for Quad Cities Unit 2 (continued)

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: Pressure Suppression (Appendix D.2.6 of IE Bulletin 79-01B Response)

PS-2-1622A,B	Pressure switch	21	A. An alternative flowpath through the SGTS is available to relieve torus vacuum. B. Failure of these switches could be resolved by operator actuation of the 1601-20A,B valves.
SO-2-1601-50A,B	Solenoid valve	47	An alternative flowpath is available through the SGTS to relieve torus vacuum in the event these components should fail.

SYSTEM: Service Water (Appendix D.2.8 of IE Bulletin 79-01B Response)

2-5746A,B	Room cooler fan motor	37	These motors have Class B insulation. Other motors with Class B insulation have been tested to >2.0E07 rads and qualified. It is expected that this insulation would not suffer radiation failure for the specified dose (5.1E05 rads).
2-57448A,B	Room cooler fan motor	38	These motors have Class B insulation. Other motors with Class B insulation have been tested to >2.0E07 rads and qualified. It is expected that this insulation would not suffer radiation failure for the specified dose (1.5E05 rads).

List of Equipment Not Presently Qualified for Quad Cities Unit 2 (continued)

<u>Plant Identification</u>	<u>Component Description</u>	<u>TER Number</u>	<u>Continued Operation is Justified for the Following Reason</u>
<u>SYSTEM: Containment Isolation (Appendix D.2.10 of IE Bulletin 79-01B Response)</u>			
SO-2-203-1A through D, SO-2-203-2A through D	Solenoid for MSIV air operator	16	A. These components are designed as redundant pairs, each separated from the other. B. These components complete their function in a very short period of time and would not be significantly affected by increased environmental conditions in this period. C. These components undergo periodic functional testing to verify operability. This testing would identify age-related degradation. D. Operator action to cut the air supply to the solenoids would require closure of the MSIVs.
MO-2-220-1	Motor-operated globe valve	19	A. This component is designed as a redundant pair with MO-2-220-2, each separated from the other with only one subjected to a harsh environment. B. This component completes its function in a very short period of time and would not be significantly affected by increased environmental conditions in this period. C. This component undergoes periodic functional testing to verify operability. This testing would identify age-related degradation. D. Identical components remained functional during the June 5, 1970, depressurization incident at Dresden Unit 2. E. Other valves are available on the main steam line drain lines to perform the isolation function should valve MO-2-220-1 fail to close.
MO-2-3706	Motor-operated gate valve	41	A. This component is designed as a redundant pair with MO-2-3703, each separated from the other with only one subjected to a harsh environment. B. This component completes its function in a very short period of time and would not be significantly affected by increased environmental conditions in this period. C. Identical components remained functional during the June 5, 1970, depressurization incident at Dresden Unit 2. This incident resulted in harsh environmental conditions.

List of Equipment Not Presently Qualified for Quad Cities Unit 2 (continued)

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: Reactor Recirculation (Appendix D.2.12 of IE Bulletin 79-01B Response)

LIS-2-263-58A,B	Level indicating switch	42	Redundant instruments LIS-2-263-57A,B are available to provide scram and isolation on low level, and they are located in a mild environment.
LITS-2-263-73A,B	Level indicating transmitter switch	42	These switches provide an interlock for containment spray initiation. Other level instruments are available to provide the same information and, if required, operator action to override these instruments could be taken. Additionally, if these switches fail, the safety analysis would not be affected because no credit was taken for containment spray operation in the safety analysis.
MO-2-202-5A,B	Motor-operated gate valve and brake	45	<ul style="list-style-type: none">A. Similar components have been qualified for these environmental conditions.B. These components complete their function in a very short period of time and would not be significantly affected by increased environmental conditions in this period.C. Identical components remained functional during the June 5, 1970, depressurization incident at Dresden Unit 2. This incident resulted in harsh environmental conditions.D. Failure of these valves would not compromise the operation of the ECCS.E. Each component undergoes periodic functional testing to verify operability. This testing would identify age-related degradation.
POS-2-220-44, -45	Position switch	None	This component provides indication only. Its failure would not affect safety circuits or mislead the operator.
SO-2-220-45	Solenoid valve		This component is one of a redundant series pair, each separated from the other. This component completes its function in a very short period of time and would not be significantly affected by harsh environmental conditions in this period.

List of Equipment Not Presently Qualified for Quad Cities Unit 2 (continued)

Plant Identification Component Description TER Number Continued Operation is Justified for the Following Reason

SYSTEM: Reactor Core Isolation Cooling (Appendix D.2.18 of IE Bulletin 79-01B Response)

MO-2-1301-16	Motor-operated gate valve	None	A. This component is designed as a redundant pair with MO-1-1301-17, each separated from the other with only one subjected to a harsh environment. B. This component completes its function in a very short period of time and would not be significantly affected by increased environmental conditions in this period. C. Identical components remained functional during the June 5, 1970, depressurization incident at Dresden Unit 2. This incident resulted in harsh environmental conditions. D. Each component undergoes periodic functional testing to verify operability. This testing would identify age-related degradation.
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SYSTEM: General-Use Electrical Equipment (Appendix D.2.19 of IE Bulletin 79-01B Response)

Cable	XLPE insulation with polyvinyl chloride jacket	None	A. Similar items have been successfully qualified for required environmental conditions. B. Identical components remained functional during the June 5, 1970, depressurization incident at the Dresden Unit 2. This incident resulted in harsh environmental conditions.
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