

Iowa Electric Light and Power Company

September 30, 1983

NG-83-3368

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

Subject: Duane Arnold Energy Center
Docket No: 50-331
Op. License No: DPR-49
Qualification of Safety-Related Electrical
Equipment

Dear Mr. Denton:

This letter and attachment comprise Iowa Electric Light and Power Company's fourth semiannual report on the environmental qualification (EQ) program for the Duane Arnold Energy Center (DAEC).

The scope of this report has been chosen to simplify and improve the efficiency of future reviews. To achieve this goal, the attached report incorporates or supersedes relevant information appearing in Iowa Electric's four previous EQ submittals dated January 29, 1982; July 15, 1982; February 11, 1983; and May 20, 1983. Where information previously submitted has been found acceptable by Franklin Research Center in its Technical Evaluation Report (TER) C5257-499 dated August 18, 1982, a note to this effect has been added to the section of the attached report containing the information.

Section II of the report provides an update of actions to resolve environmental qualification action items. Twenty-three of the 41 action items have been completely resolved by analysis, equipment replacement, or equipment relocation. Seventeen action items will be resolved by replacement or installation of new equipment between now and the end of the DAEC Cycle 8 refueling outage and resolution of action item 31 will be addressed as part of the NUREG-0737 Supplement 1 review.

Section III reiterates previous positions relative to the HPCI system, RHR corner room high energy line breaks, and method of evaluating harsh environment equipment aging effects. Section III also includes three new subsections describing methods of complying with 10 CFR 50.49 for replacement parts/equipment, additions to the list of equipment requiring EQ, and the system sort of equipment requiring EQ.

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Section IV describes the status of actions to identify accident monitoring instruments requiring EQ. Any changes to this list will be addressed in future responses to Supplement 1 of NUREG-0737.

Section V provides a description of the report's Appendix B3 data and evaluation sheets [system component evaluation worksheets (SCEW)].

Sections VI through VIII are an update of technical summary responses previously submitted for TER comments on DAEC equipment classified as Category I.b, II.a, and IV, respectively. Responses to TER comments on Category II.c equipment items have not been requested by the NRC; but because those comments are the only group not yet addressed, the information contained in Section IX is volunteered in the interest of completeness and to demonstrate continued responsiveness on the EQ issue.

Appendix A is an update of the list (sorted by system) of DAEC electrical equipment requiring EQ. Mild environment equipment have been excluded from this appendix consistent with the scope of 10 CFR 50.49.

As discussed in our letter of February 11, 1983, Iowa Electric maintains an aggressive EQ program which we believe to be responsive to NRC identified concerns.

With the submission of this fourth semi-annual EQ report (which is intended to provide a final EQ resolution and update status), we request that the NRC complete its review of the DAEC EQ program and issue a final SER closing out the issue.

If we can be of further assistance, please advise.

Very truly yours,



Richard W. McGaughy
Manager, Nuclear Division

RWM/BWR/dmh*

Attachment: Fourth Semiannual Report on Environmental Qualification Program

cc: B. Reid
L. Liu
S. Tuthill
B. Siegal
NRC Resident Office
Commitment Control No. 83-0232

REPORT ON THE
ENVIRONMENTAL QUALIFICATION PROGRAM
FOR THE
DUANE ARNOLD ENERGY CENTER
IOWA ELECTRIC LIGHT AND POWER COMPANY
DOCKET NUMBER 50-0331

Prepared by
Bechtel Power Corporation
September 22, 1983

REGULATORY DOCKET FILE COPY

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I. INTRODUCTION

This report provides the fourth and intended to be final semiannual update on the Duane Arnold Energy Center (DAEC) environmental qualification program.

The original DAEC response to IE Bulletin 79-01B was provided via Reference 1 on October 31, 1980. The NRC issued a safety evaluation report (SER) on the DAEC environmental qualification program on June 3, 1981. In response to this SER via Reference 2, dated September 8, 1981, Iowa Electric committed to semiannual updates of progress on environmental qualification at the DAEC.

In addition to status of resolution of environmental qualification action items, the first semiannual update (Reference 3), dated January 1982, resubmitted harsh environment system component evaluation worksheets (SCEWs) which had been updated as a result of refinement of post-accident environmental conditions, review of ongoing or recent design changes, and self-audits to improve quality and level of detail. The second semiannual update (Reference 4) resubmitted SCEWs to reflect qualified life and maintenance requirements resulting from an evaluation of harsh environment equipment aging effects; the third semiannual update (Reference 5), dated February 1983, finalized to the extent possible the DAEC list of accident monitoring instruments requiring environmental qualification (SCEWs were not updated). Reference 5 also responded to the second NRC SER, dated December 20, 1982, on the DAEC environmental qualification program by providing additional technical summary information on technical evaluation report (TER) Category Ib and IIa equipment items. Iowa Electric's response (Reference 6), dated May 20, 1983, to 10 CFR 50.49 provided a description of methodology used to identify equipment requiring environmental qualification, referenced previous submittals to identify equipment, and provided technical summary information on TER Category IV equipment items (in response to an NRC SER clarification, dated May 4, 1983). TER category designations are defined at the bottom of Table I-1.

The scope of equipment addressed by this fourth semiannual report is the same as that defined in 10 CFR 50.49; however, as stated in Reference 6, the list of harsh environment equipment required for a design basis loss-of-coolant accident (LOCA) and other high-energy line breaks (HELBs) was confirmed to envelop other design basis

accident requirements. This report supersedes information previously submitted in References 3 through 6. In addition, SCEWs have been included for the harsh environment accident monitoring instruments first identified in Reference 5.

In Sections II through X of this report, technical and other major changes from or additions to the corresponding sections of the appropriate previous submittal are indicated by revision bars.

Section II provides a description of each (as yet unresolved) environmental qualification action item, its intended method and schedule for resolution, and justification for continued operation (JCO). Where equipment replacement is required, a resolution completion schedule is indicated relative to a refueling cycle number. Cycle 8 is presently scheduled for fall 1984 and represents a deadline consistent with that scheduled by 10 CFR 50.49. For each completed action item, where a description of the completed resolution has already been submitted, a reference to that submittal is made.

Section III reiterates previous commitments with respect to high-pressure coolant injection (HPCI) system post-accident function and operability and residual heat removal (RHR) corner room HELBs, provides a brief description of the aging evaluation effort, provides a new subsection describing the intended method of complying with 10 CFR 50.49 with regard to replacement equipment/parts, and describes efforts related to identification of additional harsh environment equipment.

Section IV provides a description and status of NRC and Iowa Electric activities affecting finalization of the list of accident monitoring instruments requiring environmental qualification. This list is an interim identification of these accident monitoring instruments and the final list will be submitted with the NUREG 0737, Supplement I response.

Section V describes the format and information contained in the equipment qualification summary sheets of Appendix B3.

Sections VI, VII, VIII, and IX provide technical summary responses to TER comments on equipment classified in Categories I.b, II.a, IV, and II.c, respectively. (Note: For convenience, Table I-1 provides a cross-reference summary of TER equipment item number, TER category designation, DAEC equipment plant identification number, and section of report responding to TER comments.)

As described above, technical summary responses on Category I.b, II.a, and IV equipment items have been submitted previously in accordance with NRC requests. It was noted that TER comments on Category II.c equipment items (until this submittal) represented the only group of equipment item comments not yet documented as resolved in an NRC submittal. Therefore, in the interest of completeness and to continue to be responsive on the environmental qualification issue, the information contained in Section IX is volunteered.

In many cases when responding to a TER comment, a document [not previously requested for review by Franklin Research Center (FRC)] exists in the DAEC environmental qualification central files which resolves the comment. In such cases, the document is cited and its technical content summarized. As stated in References 5 and 6 (in the interest of expediency and to minimize future document submittal requests), for cases where a document requires further review, representatives from the NRC and FRC are invited to inspect the DAEC environmental qualification files.

Section X reiterates from Reference 6, a description of the methodology used to address nonsafety-related electric equipment failures.

Appendix A is a listing of harsh environment electrical equipment included in the environmental qualification program sorted by system. It is provided in the same format as Appendix A of References 2, 3, and 4.

Appendix B contains three parts. Appendix B1 provides a list of general notes that are referenced in the equipment qualification summary sheets. Appendix B2 contains a cross-index to the summary sheets that list equipment by plant identification number and corresponding equipment identification number. Appendix B3 contains the equipment qualification summary sheets for harsh environment equipment arranged by manufacturer model type.

TABLE I-1

TER EQUIPMENT ITEM CROSS REFERENCE

TER Equipment Item	DAEC Plant Identification	TER Qualification Category*	Fourth Semiannual EQ Report Subsection	EQ Report Evaluation Sheet Number
001	MO-8401A-D, MO-8402A-D, MO-8403A-D	II.a	VII.A	L200-23
002	MO-1900, MO-2700, MO-4423, MO-2400	II.a	VII.A	L200-16 L200-02
003	MO-2517	II.c	IX.A	L200-14
004	MO-4424	II.c	IX.A	L200-13
005	MO-2321	II.a	VII.A	L200-13
006	MO-2312	II.a	VII.A	L200-07
007	MO-2239	I.b	VI	L200-18
008	MO-1937	II.a	VII.A	L200-14
009	MO-1909	I.b	VI	L200-19
010	MO-1908, MO-2238, MO-4627, MO-4628	I.b	VI	L200-17
011	MO-1905, MO-2003	I.b	VI	L200-09
012	MO-2135, MO-2115	I.b	VI, VI.B	L200-22
013	MO-2001	II.c	IX.A	L200-06
014	MO-2046	II.a	VII.A	L200-01
015	MO-2000, MO-2137	I.b	VI, VI.B	L200-21
016	MO-1934, MO-2007, MO-1970, MO-2009, MO-2104, MO-2124, MO-2290A,B; MO-2038, MO-1935, MO-1989, MO-2005, MO-2069, MO-1932, MO-2112, MO-2132, MO-2010, MO-1933, MO-1936, MO-2146, MO-2147, MO-1943B, MO-2006	II.a	VII.A	L200-20 L200-03
017	MO-1940; MO-2030; MO-1939; MO-2029; MO-2031; MO-1947; MO-1941; MO-1942; MO-1902; MO-4320A,B; MO-1967; MO-2044A,B; MO-1949A,B; MO-2036 MO-1913; MO-1920; MO-1912; MO-1921; MO-2011; MO-2012 MO-1903	II.c	IX.A	L200-08 L200-01 L200-21 L200-03 L200-10 L200-20

Table I-1 (continued)

TER Equipment Item	DAEC Plant Identification	TER Qualification Category*	Fourth Semiannual EQ Report Subsection	EQ Report Evaluation Sheet Number
018	MO-2117	I.b	VI	L200-21
019	MO-1904, MO-2004	I.b	VI	E153-01
020	SV-1942	I.a	NA	T020-04
021	SV-8772A,B	I.a	NA	T020-03
022	RE-9185A,B	I.a	NA	V115-01
023	SV-1972, SV-1973, SV-2051, SV-2052	I.a	NA	T020-01
024	SV-4400, SV-4402, SV-4405, SV-4406	IV	VIII.A	A613-01
025	SV-1963, SV-2033	I.b	VI	A499-03
026	SV-5703A,B; SV-5704A,B; SV-5718A,B; SV-5719A,B	II.c	IX.B	A499-22
027	SV-8773A,B	II.c	IX.B	A499-16
028	SV-4639	I.a	NA	A499-07
029	SV-4640	I.b	VI	A499-04
030	SV-1964, SV-2035	II.c	IX.B	A499-03
031	SV-5815A,B; SV-5825A,B; SV-5801A,B; SV-7602A,B	I.b	VI	A499-01
032	SV-4309	I.b	VI	A499-01
033	SV-4303	I.b	VI	A499-32
034	SV-4311, SV-4308, SV-4312, SV-4313, SV-4306, SV-4307	I.b	VI	A499-01
035	SV-4300X	II.c	IX.B	A499-01
036	SV-4371B	I.a	NA	A499-32
037	SV-4302X, SV-4310	II.c	IX.B	A499-32
038	SV-3704, SV-3728	II.c	IX.B	A499-01
039	SV-7605A,B	II.c	IX.B	A499-01
040	SV-8107A,B; SV-8108A,B; SV-8109A,B; SV-8110A,B	I.a	NA	T020-05
041	SV-8101A,B; SV-8102A,B; SV-8103A,B; SV-8104A,B; SV-8105A,B; SV-8106A,B	I.a	NA	T020-05
042	SV-4332A,B	I.a	NA	T020-06
043	SV-4331A,B	I.a	NA	T020-06
044	SV-4333A,B; SV-4334A,B	I.a	NA	T020-06
045	SV-4412A, SV-4415A, SV-4418A, SV-4420A	I.a	NA	A499-15
046	SV-4413A, SV-4416A, SV-4419A, SV-4421A	I.a	NA	A499-15

Table I-1 (continued)

TER Equipment Item	DAEC Plant Identification	TER Qualification Category*	Fourth Semiannual EQ Report Subsection	EQ Report Evaluation Sheet Number
047	SV-4412C, SV-4415C, SV-4418C, SV-4420C, SV-4412B, SV-4415B, SV-4418B, SV-4420B	IV	VIII.B	A499-18
048	SV-4413C, SV-4413B**, SV-4416C, SV-4416B**, SV-4419C, SV-4419B**, SV-4421C, SV-4421B**	IV	VIII.B	A499-18
049	PS-4348	II.a	VII.B	I204-04
050	PDIS-1971A,B	I.b	VI	I204-04
051	FM-8408A-D	I.b	VI	S223-01
052	FT-3707, FT-3708	II.a	VII.O	NA
053	PT-2207, PT-2306	II.a	VII.O	NA
054	PT-2126, PT-2106	II.a	VII.O	NA
055	LT-4396A,B	II.a	VII.C	I204-01
056	LS-3701, LS-3721	II.a	VII.O	NA
057	LE-3701, LE-3721	II.a	VII.O	NA
058	PT-4398A,B	II.c	IX.C	I204-02
059	LT-4397A,B	II.c	IX.C	I204-02
060	PS-4400A,B,C through PS-4407A, B,C	II.a	VII.L	P381-01
061	PS-1917A, PS-1925A, PS-2023A, PS-2024A, PS-2107A, PS-2107B, PS-2127A, PS-2127B	IV	VIII.C	S382-03
062	PS-1917B, PS-2023B PS-2024B, PS-1925B	IV	VIII.C	S382-02
063	PS-8404A-D	I.b	VI	G080-98
064	PDT-1947, PDT-2046	I.b	VI	G080-48
065	PDIS-4304, PDIS-4305	IV	VIII.D	I204-06
066	CU-5835A1,A2,B1, B2; CU-5837A1,A2, B1,B2	II.a	VII.D	F081-02
067	RE-4448A-D	II.a	VII.O	NA
068	RE-9184A,B	I.a	NA	V115-01
069	1S-122A-D	II.a	VII.E	G080-42
070	ZS-4413, ZS-4416, ZS-4419, ZS-4421	II.a	VII.F	N007-03
071	ZS-4412, ZS-4415, ZS-4418, ZS-4420, ZS-1906B, ZS-1906A, ZS-2002A,B; ZS-4639	II.a	VII.F	N007-03
072	ZS-8773A,B	I.a	NA	N007-08 N007-04
073	ZS-2211, ZS-2212	II.a	VII.O	NA
074	ZS-4310	II.a	VII.M	N007-06
075	ZS-4309	II.a	VII.M	N007-06
076	ZT-1947	II.a	VII.G	O026-01
077	ZT-2046	II.a	VII.G	O026-01

Table I-1 (continued)

TER Equipment Item	DAEC Plant Identification	TER Qualification Category*	Fourth Semiannual EQ Report Subsection	EQ Report Evaluation Sheet Number
078	ZS-4640	II.a	VII.M	N007-05
079	ZS-2234, ZS-2235	II.a	VII.O	NA
080	ZS-2435, ZS-2436	II.a	VII.O	NA
081	ZS-7602A,B; ZS-5825A,B	II.a	VII.O	NA
082	ZS-4301, ZS-4304, ZS-4305	II.a	VII.M	M302-03
083	ZS-4303	II.a	VII.M	M302-03
084	ZS-4306, ZS-4307, ZS-4308	II.a	VII.M	M302-03
085	ZS-3704, ZS-3705, ZS-3729, ZS-5703A,B; ZS-5704A,B; ZS-5718A, ZS-5718B, ZS-5719A,B; ZS-3728	II.a	VII.M	M302-02
086	ZS-4311, ZS-4312, ZS-4313	II.a	VII.M	M302-02
087	1S-1061A,B	I.b	VI	I045-02
088	1V-AC-11, 1V-AC-12	I.b	VI	W120-05
089	1K-25A,B	I.b	VI	S188-01
090	1V-EF-15A, 1V-EF-15B	IV	VIII.E	L280-01
091	1P-229A, 1P-229B, 1P-229C, 1P-229D	IV	VIII.F	G080-45
092	TE-3724	II.a	VII.O	NA
093	TE-4403, TE-4404	II.a	VII.O	NA
094	TS-5836A,B; TS-5805A,B	I.b	VI	E328-01 G080-69
095	TE-4328L	II.a	VII.N	L130-05
096	TE-4386E-H, J-M	II.a	VII.N	L130-02
097	TE-4328E-H, J,K,M	II.a	VII.N	L130-01
098	TE-5805U, TE-5805V, TE-5805W, TE-5805X	IV	VIII.G	G315-01
099	TE-4328A-D	II.a	VII.O	NA
100	TE-4386A-D	II.a	VII.O	NA
101	TE-4400, TE-4401, TE-4402, TE-4405, TE-4406, TE-4407	II.a	VII.O	NA
102	TE-4443A-D; TE-4444A-D; TE-4445A-D; TE-4446A-D; TE-4477A,B; TE-4478A,B; TE-4479A,B; TE-4480A,B	I.b	VI	R369-01
103	TS-5808A,B	I.b	VI	P129-02
104	TE-2522A-D; TE-2523A-D; TE-2526A-D	II.a	VII.H	N070-02

Table I-1 (continued)

TER Equipment Item	DAEC Plant Identification	TER Qualification Category*	Fourth Semiannual EQ Report Subsection	EQ Report Evaluation Sheet Number
105	TE-2262A,B; TE-2263A,B; TE-2264A,B; TE-2453, TE-4447, TE-4451A,B; TE-2265	II.a	VII.H	N070-02
106	TE-2742A-F; TE-2743A-F; TE-2744A-F	II.a	VII.I	P427-01
107	CABLE-POWER-KER	IV	VIII.H	K080-01
108	CABLE-COAX-RAY	II.a	VII.K	R098-01
109	CABLE-INSTR-OKO; CABLE-POWER-OKO; CABLE-CONTROL-OKO	II.a	VII.K	0004-02
110	CABLE-COAX-BIW	II.c	IX.D	B365-01
111	CABLE-COAX2-ROC	II.a	VII.K	R352-03
112	CABLE-POWER-A/E; CABLE-CONTROL-A/E; CABLE-INSTR-A/E	II.a	VII.K	A385-01
113	CABLE-COAX1-ROC	II.c	IX.E	R352-02
114	CABLE-POWER-ROC; CABLE-CONTROL-ROC; CABLE-INSTR-ROC	II.a	VII.K	R352-01
115	INSTRUMENT CABLE	II.a	VII.K	V115-02
116	SPLICING KITS	I.a	NA	R098-02
117	TB GRP A (PREVIOUSLY TERMINAL BLOCKS)	I.a	NA	A000-02
118	JX-103; JX-105A-D; JX-101A,B; JX-104A-D	II.a	VII.J	G080-84
119	1P-211A, 1P-211B	IV	VIII.F	G080-88
120	PDT-4623	II.a	VII.O	G080-46
121	MO-2516	II.a	VII.A	NA
122	MO-2401, MO-2512	II.a	VII.A	L200-16
123	MO-4841A,B	II.c	IX.A	L200-13
124	MO-2701	II.a	VII.A	L200-03
				L200-13

*Key	Number of TER Equipment Items
I.a Equipment qualified	17
I.b Qualification pending modificaton	24
II.a Qualification not established	56
II.b Equipment not qualified	0
II.c Equipment satisfies all requirements except qualified life or replacement schedule justified	16
III.a Equipment exempt from qualificatin	0
III.b Equipment not in the scope of the review	0
IV Documentation not made available	11

**The following solenoid valves were identified in the TER as SV-4413D, SV-4416D, SV-4419D, and SV-4421D; but are assumed to be SV-4413B, SV-4416B, SV-4419B, and SV-4421B.

II. ACTION PLAN

The information provided in this section is an item-by-item description of intended Iowa Electric action to correct or resolve cases of incomplete documentation supporting environmental qualification. In each case, a description of the action item, its resolution status, and JCO are provided. Where action is complete, a reference to the most recent semiannual update report describing the action item and its final resolution is made.

NOTE: The JCOs submitted with Reference 4 (i.e., for equipment within the scope of Action Items 6, 10, 12, 14, 17, 18, 19, 20, 22, 23, 24, 25, 27, 28, 29, and 30) were reviewed and found technically acceptable as stated in Appendix D of TER-C5257-499 (for the DAEC), dated August 18, 1982.

In this section, the applicable regulatory document (to which environmental qualification compliance is being sought) is indicated where resolution of an action item requires equipment replacement. In general, compliance with NUREG 0588, Category I is indicated for cases where a purchase order citing such requirements has already been issued. For the remaining cases, compliance with 10 CFR 50.49 (which is understood to supersede NUREG 0588) is indicated. Additional DAEC replacement equipment philosophy is provided in Section III.D.

1. ASCO SOLENOID VALVES

Action complete (see Reference 2).

2. MAIN STEAM SAFETY RELIEF SOLENOID VALVES

Action complete (see Reference 2).

3. TERMINAL BLOCKS

Action complete (see Reference 2).

4. SOLENOID VALVE SV-4310

Action complete (see Reference 3).

5. MAIN STEAM ISOLATION VALVE POSITION SWITCHES

Action complete (see Reference 2).

6. PRESSURE TRANSMITTERS PDT-2046, -1947

a. Action Item Description

These pressure transmitters sense differential pressure between the tubes and shell of the RHR heat exchanger and function to maintain service water pressure greater than RHR system pressure to prevent radioactive leakage into RHR service water. These transmitters must be qualified for a radiation dose of 5.9×10^6 rads. Documentation demonstrating qualification is not available.

b. Resolution

These components will be replaced during the Cycle 8 refueling outage with transmitters qualified to NUREG 0588, Category 1.

c. Justification for Continued Operation

Radiation doses were calculated using conservative, nonmechanistic models. Mechanistic release models will result in radiation releases that occur several hours after the postulated accident. During this time, action will be taken to shut down redundant systems beyond those needed for coolant injection. This will result in radiation exposures to only one of two redundant equipment trains. Also, actual doses will be less than those calculated using such conservative assumptions. Finally, if the operating equipment suffers degradation (resulting in failure) due to radiation exposure, the failure will be detected by the operators via system alarms; the operators will then activate the redundant system train. During time available after stabilization of core cooling, additional coolant injection paths will be established, if necessary, to ensure long-term cooling.

7. RHR PUMP MOTORS 1P-229A,B,C,D

Action complete (see Reference 4)

8. CORE SPRAY PUMP MOTORS 1P-211A,B

Action complete (see Reference 4)

9. LEVEL SWITCHES LS-1861A,B,C,D

Action complete (see Reference 4)

10. FLOWMETERS FM-8408A,B,C,D

a. Action Item Description

These flowmeters monitor main steam line leakage flow. They are S.K. Instrument Model 20-9651-8550, but were supplied by General Electric. These flowmeters provided a signal to their respective flow switches which cause system isolation on high flow. The flow switches are located in the control room (mild environment). The flowmeters and associated transmitter circuitry are located in the steam tunnel and must be qualified for a total dose of 2.1×10^7 rads. Because of the equipment's post-accident safety function and its location, qualification for pressure, temperature, and humidity is not required. S.K. Instrument has qualified the flowmeter for 1×10^6 rads. Additional qualification documentation is required.

b. Resolution

New flow sensors qualified to NUREG 0588, Category I will be installed outside the steam tunnel to provide the signal to perform the safety function of system isolation on high flow. The sensors are being procured from Fluid Components, Inc. and will be installed during the Cycle 8 refueling outage via DCR 1095.

c. Justification for Continued Operation

Continued station operation is justified for the following reasons:

- 1) Radiation doses were calculated using conservative, nonmechanistic models. Mechanistic release models will result in radiation releases that occur several hours after the postulated accident. Therefore, actual doses will be less than those calculated using such conservative assumptions.

- 2) Failure of these components could, at worst, cause the failure of the main steam isolation valve (MSIV) leakage control system to function properly. In this case, radioactive leakage past the MSIVs, which is expected to be minimal, will normally be contained by the main steam piping outside the drywell.

11. HEATERS 1S-122A,B,C,D

Action complete (see Reference 3).

12. EXHAUST UNITS 1K-25A,B

Action complete (see Reference 5).

13. MOTOR CONTROL CENTER 1D41

Action complete (see Reference 3).

14. AIR COOLING UNITS 1V-AC-11,12

a. Action Item Description

The motors for these air cooling units are Westinghouse with TEFC type enclosures. These units function to provide post-accident room cooling for the RHR rooms. These units are located in the RHR rooms and must be qualified for a total dose of 5.9×10^6 rads. Because of the equipment's post-accident safety function and its location, qualification for pressure, temperature, and humidity is not required.

b. Resolution

Subsequent investigation and evaluation indicate that it is not feasible to document qualification of these motors. They will be replaced during the Cycle 8 refueling outage with new motors qualified to NUREG 0588, Category I. Installation will be via DCR 1148.

c. Justification for Continued Operation

Continued station operation is justified for the following reasons.

- 1) Radiation doses were calculated using conservative, nonmechanistic models.

Mechanistic release models will result in radiation releases that occur several hours after the postulated accident. Therefore, actual doses will be less than those calculated using such conservative assumptions.

- 2) Failure of the room cooling unit would, at worst, result in elevated room temperatures during emergency conditions. A study was recently completed to evaluate the effect of loss of room cooling in the HPCI room. The results of this study, which are conservatively analogous to the RHR corner rooms, show a temperature rise of approximately 13F in 2 hours using conservative assumptions. Under realistic room and environmental conditions, it is expected that the room temperature will remain near or below the maximum design room temperature.
- 3) Although each RHR corner room contains one cooling unit, the corner rooms and associated safety-related equipment provide redundant safety system capability. Because of operational considerations, both redundant safety systems will not be required to operate continuously. Therefore, radiation exposure (from process fluid) to the cooling fan motors associated with each train will not be the same, resulting in longer overall RHR corner room temperature control capability. Also, in the longer term, corner room process fluid heat load will be reduced.

15. AIR COOLING UNITS 1V-AC-14A,B

Action complete (see Reference 4)

16. MOTOR-OPERATED VALVES

Action complete (see Reference 3).

17. FLOW SWITCHES FIS-2111, 2131

Action complete (see Reference 5).

18. PRESSURE SWITCHES PDIS-1971A,B

Action complete (see Reference 5).

19. LIMITORQUE VALVE OPERATOR MOTOR BRAKES (MANUFACTURER AND MODEL TYPE VARIOUS)

a. Action Item Description

Environmental qualification documentation is not available to support a post-accident function capability of motor brakes contained in Limitorque valve operators. Limitorque valve operator records have been reviewed to confirm the list of harsh environment valve operators containing motor brakes. The following motor operators have been determined to contain motor brakes: MO-1909, MO-1908, MO-2238, MO-2239, MO-1902, MO-2135, MO-2115, MO-2117, MO-2137, MO-2003, MO-2000, MO-1905, MO-4627, and MO-4628.

MO-2000, MO-2115, MO-2135, and MO-2137 are located in areas of the reactor building that are harsh for radiation only and are required to be qualified for a total radiation dose of 7.5×10^5 rads. The remaining motor operators are in locations subject to LOCA or other HELB effects in addition to post-LOCA radiation doses. These motor operators must be qualified for a total radiation dose in the range of 7.5×10^5 rads to 4.3×10^7 rads (depending on location). Environmental qualification of these motor brakes is under investigation.

b. Resolution

An investigation (which has included walkdowns for nameplate information and communications with valve operator, motor, and motor brake manufacturers) has provided the following motor brake summary information.

<u>Plant ID</u>	<u>Brake Manufacturer/Model</u>	<u>Location</u>
MO-1908	Dings/R71010-7	Drywell
MO-2238	Dings/R71015-7	Drywell
MO-4627	Dings/2-63015-24	Drywell
MO-4628	Dings/2-63015-24	Drywell
MO-1905	Dings/6-83075-19	RHR valve room
MO-2003	Dings/6-83075-19	RHR valve room
MO-2117	Dings/X6-71015-29	RWCU heat exchanger room

<u>Plant ID</u>	<u>Brake Manufacturer/Model</u>	<u>Location</u>
MO-1902	Dings/X6-71010-29	RHR valve room
MO-2000	Dings/X6-71010-29	RB south
MO-2137	Dings/X6-71015-29	RB north
MO-2135	Dings/X6-71015-29	RB north
MO-2115	Dings/X6-71015-29	RB south
MO-1909	Stearns/1-087-035	RHR valve room
MO-2239	Stearns/1-087-035	Steam tunnel

Dings Models R71010-7 and R71015-7 are similar in principle of operation, construction, and subcomponent materials to Dings Model 6-61009-50 tested by FRC (Test Report F-C2232-01, dated November 1, 1968) for Limitorque Corporation with the exception of a gasket between the brake enclosure housing and brake bracket which functions to ensure that the brake is waterproof. Installation in Models R71010-7 and R71015-7 of a housing gasket material qualified for the post-LOCA environmental service conditions (for construction consistency with Spec 50 models) will be accomplished before or during the Cycle 8 refueling outage.

NOTE: Each "Spec 50" Dings motor brake model (i.e., model number of Form X-XXXXX-50) can also be shown to be similar in principle of operation, construction, and subcomponent materials. Using Test Report F-C2232-01 as a basis and subcomponent materials information available from Dings Models R71010-7 and R71015-7 (and the Spec 50 models) have been shown to meet the criteria of the Division of Operating Reactors (DOR) guidelines for their DAEC application.

Environmental qualification of the motor brakes for MO-2000, MO-2115, MO-2135, and MO-2137 has been established by engineering analysis of the radiation and thermal aging effects of the motor brake's subcomponent materials. This analysis was completed in August 1983.

The remaining motor brakes will be replaced with the Spec 50 Dings model (which is qualified to the DOR Guidelines) during or before the Cycle 8 refueling outage. This intended resolution is understood to be consistent with NRC requirements for spare and replacement parts (reference NRC Generic Letter 82-09 dated April 20, 1982) because sound reasons for the intended action exist as summarized below.

- 1) The Spec 50 Dings model represents the best motor brake available and it is qualified to the DOR Guidelines. Neither motor brakes qualified to NUREG 0588 nor incentive for the industry to provide a NUREG 0588 qualified motor brake exist because currently available motor-operated valves do not utilize motor brakes.
- 2) Because of the relatively simple principle of operation and construction (spring solenoid-actuated disk brake) and available subcomponent materials information, no safety advantage exists between a NUREG 0588 qualified model and a model which satisfies the DOR Guidelines.
- 3) The additional cost and radiation exposure to maintenance personnel incurred from replacing the valve actuator or modifying it (to allow deletion of the brake), as compared to replacing the motor brake, cannot be justified for safety reasons.

If a compatible replacement motor brake (meeting minimum environmental qualification requirements) cannot be located, the valve operator will be modified to eliminate the need for the motor brake.

c. Justification for Continued Operation

Continued station operation is justified for the following reasons.

- 1) As was demonstrated during Limitorque valve operator qualification tests, the weatherproof operator housing minimizes the effect of harsh environmental parameters except for radiation. Therefore, the primary concern of an unqualified motor brake would be radiation induced failure of the motor brake solenoid (resulting in locking the valve in its position at the time of failure). All valve operators identified above perform their safety function immediately upon detection of accident initiation and prior to being subjected to a radiation dose of a value likely to cause motor brake failure.

- 2) Radiation doses were calculated using conservative, nonmechanistic models. Mechanistic release models will result in radiation releases which occur several hours after the postulated accident. Therefore, actual doses will be less than those calculated using such conservative assumptions.
- 3) Additional justification is provided below.
 - a) Valves MO-1905 and MO-2003 are containment isolation valves in the low-pressure coolant injection (LPCI) lines. These valves are normally closed and will remain so following an accident until it becomes necessary to initiate core cooling with the LPCI system. In the event that these valves fail to open at that time, this will cause a loss of LPCI capability. An analogous scenario has been evaluated in response to FSAR Question 9-6.4 on Page 9-6.4-1 of the original DAEC FSAR. The conclusion for case three of that question wherein "no LPCI flow will enter the vessel" is that it "will not result in a peak cladding temperature greater than that presented in the FSAR." Therefore, the consequences of the potential failure of these valves has been evaluated and found acceptable.
 - b) Valves MO-2238 and MO-2239 are containment isolation valves in the HPCI system. As discussed in Section III.A of this report, the HPCI system need not be environmentally qualified for the HPCI function. Should these valves be required to perform their containment isolation function, the HPCI function will no longer be required and containment isolation will occur prior to the valves receiving a significant radiation dose. Following closure for containment isolation, the valves need not reopen.

- c) Valve MO-1902 is a containment isolation valve for one of the containment atmosphere spray headers in the RHR system. This valve is normally closed and will remain so unless the operator elects to manually initiate drywell or suppression pool spray. If the valve fails to open, the operator will be denied containment spray capability. In evaluating the design basis accident (DBA), the DAEC FSAR does not take credit for operation of the containment spray system, therefore, inability to initiate containment spray will not impair the ability for safe shutdown following a DBA.
- d) Valve MO-2117 is a core spray pump discharge isolation valve. This valve is normally closed and must open to provide core spray flow to the reactor vessel. The environment surrounding this valve does not become harsh until after the valve performs its safety function. The radiation dose to the valve operator is primarily a result of the radioactive process fluid flowing through the valve after it opens.
- e) Valves MO-4627 and MO-4628 are recirculation pump discharge isolation valves (one for each loop). These valves are normally open but close in the event of high drywell pressure or low reactor vessel level. This directs flow from the LPCI system through the recirculation loop directly to the reactor vessel. In the event of a failure of these valves to close, core cooling flow continues to be provided, although a portion of the flow will be through the suction side of the intact recirculation loop backwards through the recirculation pump and into the reactor vessel. Additional cooling is also provided by the redundant core spray system.
- f) Valves MO-1908 and MO-1909 are containment isolation valves in the RHR supply line from the recirculation system. These valves are normally closed

and will remain so following a DBA. The shutdown cooling mode of the RHR system is not required following a DBA with its high radiation source terms; therefore, the valves remain in the closed position and will be unaffected by a brake failure.

20. GENERAL ELECTRIC ELECTRICAL PENETRATIONS CANISTER
TYPE MODELS NS02-I, NS02-II, NS03, AND NS04

a. Action Item Description

The following electrical penetrations (General Electric canister type Models NS02-I, NS02-II, NS03, and NS04) provide cable penetrations into the drywell.

JX-100A	JX-100B	JX-100C	JX-100D
JX-103	JX-105A	JX-105B	JX-105C
JX-105D	JX-101A	JX-101B	JX-104A
JX-104B	JX-104C	JX-104D	

Note: Electrical penetrations JX-100A, B, C, and D have been included within the scope of this action item consistent with the electrical support function which they provide for the post-TMI-2 modification to add containment high-range radiation monitors (DCR 909).

The penetrations are required to be qualified for LOCA conditions inside drywell. The penetrations were not qualified for spray by test. Additional investigation into post-LOCA operability during demineralized water spray conditions is required.

A subcomponent analysis being conducted on the penetration assemblies has also determined that penetrations JX-105A through JX-105D and JX-104A may utilize nylon-insulated splices. Although this splice material is qualified for post-LOCA drywell conditions, additional evaluation of susceptibility to aging degradation is required. For the limiting type of nylon, the potential for significant aging degradation (affecting post-accident operability) will not occur prior to 10 years of operation (reference DOR Guidelines, Table C-1) (i.e., approximately 1984 for the DAEC). Investigation for identification of the type of nylon is required to allow further determination and refinement of qualified life (beyond 10 years) and associated surveillance/modification requirements.

b. Resolution

The electrical penetrations are shielded from the effects of water spray by a metal enclosure that totally surrounds the penetration and electrical termination area. The enclosure's orientation and adequacy for shielding against water spray was evaluated to be adequate as a result of a walkdown during the Cycle 7 refueling outage.

Resolution of the splice qualification concern will be accomplished by replacement or modification of the existing splices before or during the Cycle 8 refueling outage.

c. Justification for Continued Operation

Continued station operation is justified because the subject penetrations have been tested and environmentally qualified for severe LOCA environmental conditions, including high humidity and superheated steam. The penetration assemblies are inherently designed to prevent the intrusion of moisture into critical components. Because of its protection from direct spray effects, the splice materials do not require continued mechanical strength to perform its safety function of electrical insulation during a LOCA. When not in tension or under continued stress, nylon's ability to withstand aging and radiation dose is increased. Also, potential for significant aging degradation of nylon will not occur until after at least 10 years of operation (reference DOR Guidelines, Table C-1). Therefore, design basis LOCA conditions are not expected to impact the environmental capability of the penetrations.

21. AUTOMATIC VALVE COMPANY SOLENOID VALVE MODEL C5450-5

Action complete (see Reference 4)

22. FENWAL CONTROL UNITS MODEL 35003-0

a. Action Item Description

Control units CU-5835A1, A2, B1, B2, and CU-5837A1, A2, B1, B2 (Fenwal Model 35003-0) are located in the standby gas treatment system (SGTS) room at elevation 786' in the reactor building. They are required to function as part of the SGTS. The

control units must be qualified for a 30-day integrated radiation dose of 1.6×10^8 rads. Because of the equipment's post-accident safety function and its location, qualification for pressure, temperature, and humidity is not required. Each control unit consists of a metallic sensor and an electronic switch. An analysis of radiation and thermal aging effects of the sensor, including its extension cable has determined its acceptability for at least 4.8×10^8 rads and a 40-year qualified life. Qualification documentation is not available for the electronic switch.

b. Resolution

The electronic switches were relocated to a mild environment during the Cycle 7 refueling outage. Relocation was accomplished via DCR 1121.

23. ELECTRODYNE VALVE OPERATOR MODEL TN-24-400

a. Action Item Description

Valve operators MO-1904 and MO-2004 (Electrodyne Model TN-24-400) are located in the RHR valve room and are required to function as part of the RHR. These operators are required to be qualified for a temperature of 277F, a pressure of 1.2 psig, a relative humidity of 100%, and a 40-year normal plus 30-day accident integrated radiation dose of 5.6×10^6 rads.

b. Resolution

The DAEC valve operator model (with the exception of the motor and motor brake) has been determined to be similar in construction and operating principle to the Electrodyne model (TN200) tested by Franklin Research Institute Laboratory in Test Report F-C2883, dated March 1971, for Link-Belt Division of FMC Corporation. The environmental qualification concern is limited to the motor (Allis-Chalmers Model 012) and motor brake (Stearns Electric Model 1-081-011) of each of the valve operators.

Replacement motor and motor brake combinations acceptable with respect to both compatibility (with the existing valve operators) and environmental qualification have not been located. Therefore,

unless an acceptable motor and motor brake combination is located, the entire valve operator assemblies will be replaced with an equivalent model manufactured by Limitorque Corporation. This replacement operator will be qualified in accordance with 10 CFR 50.49 to the extent possible. If the replacement model requires a motor brake, the new brake will be qualified consistent with NRC policy for replacement parts (see resolution of Action Item 19).

c. Justification for Continued Operation

Continued station operation is justified for the following reasons.

- 1) Radiation doses were calculated using conservative, nonmechanistic models. Mechanistic release models will result in radiation releases that occur several hours after the postulated accident. Therefore, actual doses will be less than those calculated using such conservative assumptions.
- 2) The room in which the valves are located does not contain a high-energy line; however, it does communicate (via an unsealed pipe chase) with the torus room in which a HELB is postulated. Therefore, the HELB conditions in the torus room have been conservatively applied to the room containing these valves. Because of the remoteness of these valves from the source of the HELB, the actual environmental conditions at the valve's location will be less than specified.

24. ASCo SOLENOID VALVES MODELS HT831665, 831665, AND 8320A6; HB8302C25RU

a. Action Item Description

The following solenoid valves (ASCo Models HT831665, 831665, 8320A6, and HB8302C25RU) are located in various areas at the DAEC and are required to perform safety functions in several different systems.

SV-1963	SV-1966	SV-2033	SV-2037
SV-5815A	SV-5815B	SV-5825A	SV-5825B
SV-5801A	SV-5801B	SV-7602A	SV-7602B
SV-4303	SV-4306	SV-4307	SV-4308
SV-4311	SV-4312	SV-4313	SV-4640
			SV-4309

These solenoid valves are located in areas that are harsh for radiation only, with the required doses ranging from 2.9×10^5 rads to 1.6×10^8 rads.

b. Resolution

These valves were replaced during the Cycle 7 refueling outage via DCR 1109. The Model 831665 and HT831665 valves were replaced by ASCO Model NP831665E; the Model 8320A6 was replaced by ASCO Model NP8320A173E; and the Model HB8302C25RU was replaced by ASCO Model 206-832-2U. All these replacement models are qualified for a radiation dose in excess of 1.6×10^8 rads and to the requirements of NUREG 0588, Category I.

25. PENN TEMPERATURE SWITCH MODEL A-19ABB-6

a. Action Item Description

Temperature switches TS-5808A and TS-5808B (Penn Model A-19ABB-6) are located in the SGTS room at elevation 786' in the reactor building. They are required to function as part of the SGTS. Their specific location in the SGTS requires qualification for a design basis total radiation dose of 2.5×10^7 rads. This required radiation dose accounts for distance attenuation from the primary radiation service within the room. Because of the equipment's post-accident safety function and its location, qualification for pressure, temperature, and humidity is not required.

b. Resolution

Qualification by analysis is not possible because of insufficient radiation qualification information associated with the temperature switch bulb fill fluid. The existing temperature switches will be replaced during the Cycle 8 refueling outage with temperature switches (or a temperature element and switch combination) qualified to 10 CFR 50.49 requirements. Installation will be via DCR 1142.

c. Justification for Continued Operation

Continued station operation is justified for the following reasons.

1) Radiation doses were calculated using conservative, nonmechanistic models. Mechanistic release models will result in radiation releases that occur several hours after the postulated accident. Therefore, actual doses will be less than those calculated using such conservative assumptions.

2) At the start of an accident, both trains of the SGTS will be automatically started. Plant operating procedures require that one train be manually isolated such that only one train is operated at a time. The dominant radiation source for the SGTS is the loading of the SGTS filters. Therefore, the train which is isolated initially following an accident will not experience the same radiation doses as the operating train. Should the initially operated train fail, the redundant train can be restarted to maintain the SGTS function.

26. GULTON INDUSTRIES COMPANY TEMPERATURE ELEMENT
MODEL TCA-0646

Action complete (see Reference 4)

27. ESSEX CONTROLS TEMPERATURE SWITCHES (MODELS 351-34912
AND 351-253924)

Action complete (see Reference 5).

28. INDUSTRIAL ENGINEERING EQUIPMENT COMPANY HEATERS
MODEL TFZCP15900

Action complete (see Reference 5).

29. ROSEMOUNT TEMPERATURE ELEMENTS MODEL 104MA23ABBB

a. Action Item Description

The following temperature elements are located in the steam tunnel and turbine building near the main steam lines and are required to function for main steam line break (MSLB) leakage detection.

TE-4443A	TE-4443B	TE-4443C	TE-4443D
TE-4444A	TE-4444B	TE-4444C	TE-4444C
TE-4445A	TE-4445B	TE-4445C	TE-4445D
TE-4446A	TE-4446B	TE-4446C	TE-4446D
TE-4477A	TE-4477B	TE-4478A	TE-4478B
TE-4479A	TE-4479B	TE-4480A	TE-4480B

These temperature elements are required to be qualified for a temperature of 300F, a pressure of 1.8 psig, a relative humidity of 100%, and a 40-year integrated dose of 7.2×10^6 rads.

b. Resolution

These temperature elements will be replaced with new Pyco temperature elements meeting NUREG 0588, Category I requirements. Replacement, scheduled for the Cycle 8 refueling outage, will be via DCR 1161.

c. Justification for Continued Operation

Continued station operation is justified for the following reasons.

- 1) Radiation doses were calculated using conservative, nonmechanistic models. Mechanistic release models will result in radiation releases that occur several hours after the postulated accident. Therefore, actual doses will be less than those calculated using such conservative assumptions.
- 2) The equipment qualification concern is the quantitative effect of radiation on the mechanical and electrical properties of each temperature element's teflon-insulated lead wire. This lead wire is contained inside a weatherproof head and is not subject to mechanical stress. Also, it is not essential that electrical insulation maintain its mechanical strength and other properties for proper operation of the temperature element. With respect to electrical properties, only dielectric strength and electrical resistance are important but these properties are not permanently affected by radiation dose. Although teflon's electrical resistance and dielectric strength are somewhat affected by radiation dose rate, these temperature elements do not perform a safety function during accidents that produce high radiation dose rates. Therefore, it is unlikely that degradation of the insulation due to radiation damage will result in failure of the instrument.

- 3) These temperature elements function to close the MSIVs in the event of a MSLB. Because of redundancy, all temperature elements in a given area would be required to fail to prevent the main steam line isolation for a steam line break in that area.
- 4) For design-basis MSLBs, diverse means of detecting the accident (such as reactor vessel low water level or main steam line high flow) exist and will result in automatic closure of the main steam isolation valves.

30. BARKSDALE PRESSURE SWITCHES MODEL P1H-M85SS-V

Action complete (see Reference 5).

31. TEMPERATURE ELEMENTS FOR SUPPRESSION POOL WATER TEMPERATURE MONITORING (BURNS TYPE E)

a. Action Item Description

Suppression pool water temperature is currently being monitored by temperature elements TE-4324 and TE-4325. They are Burns Type E RTD temperature elements. These suppression pool water temperature elements must be qualified for a total radiation dose of 3.5×10^7 rads (40-year normal plus 30-day LOCA) and postulated HELBs in the torus room (peak temperature 277F, peak pressure 1.2 psig, and 100% humidity). Documentation demonstrating qualification of TE-4325 and TE-4324 is not available.

b. Resolution

Resolution of the qualification of temperature elements TE-4324 and TE-4325 will be addressed as part of the review of NUREG 0737, Supplement 1, as described in Section IV of this report.

c. Justification for Continued Operation

Continued station operation is justified for the following reasons.

- 1) Radiation doses were calculated using conservative, nonmechanistic models. Mechanistic release models will result in radiation releases that occur several hours after the postulated accident. Therefore, actual doses will be less than those calculated using such conservative assumptions.
- 2) This equipment performs no automatic safety function; therefore, failure of this equipment will not result in failure of an automatic safety system to perform its safety function.
- 3) The accident conditions producing harsh effects at the RTD location are either design basis LOCA or a HELB in the torus room.
 - a) Design basis LOCA: The equipment qualification concern is limited to the post-accident radiation dose. The subcomponents that would be susceptible to radiation degradation are the terminal blocks and lead wire insulation. If the lead wire and terminal block experiences radiation degradation, failure of the RTD to provide its temperature dependent signal is unlikely because neither the lead wire nor the terminal block are subject to mechanical stress of a level sufficient to result in gross subcomponent failure. Also, the most important use of information provided by these RTDs would be in the early stages of a LOCA when rapid suppression pool heatup occurs and radiation dose levels are less than long-term post-accident.
 - b) HELB postulated in the torus room [i.e., potential break in either the HPCI system steam supply or reactor core isolation cooling (RCIC) system steam supply piping]: For such postulated accidents, useful information is provided by these RTDs only in the event that safety relief valves lift (with resultant discharge to

the suppression pool). In such a case, alternative and diverse means of monitoring torus conditions is available (such as torus water level indication and RHR heat exchanger direct and recorded temperature indication).

4. RTDs are relatively uncomplicated temperature monitoring devices and each manufacturer model type is of similar construction and principle of operation. Because several qualified models exist (e.g., Pyco and Conax), additional reliability exists as to harsh environment post-accident operability.
5. Failure of these RTDs (to provide a representative temperature-dependent signal) is unlikely as described above and will not result in the operators taking action affecting plant safety because both redundant and diverse means of determining instrument failure exist. (Redundant: because of nonuniformity in actual harsh environment conditions at the two RTD locations, both RTDs are unlikely to fail simultaneously; Diverse: alternative indications of torus conditions exist such as torus water level, safety relief valve temperature and discharge downstream pressure switch indication, and RHR heat exchanger inlet temperature.)

32. POSITION SWITCHES FOR PRIMARY CONTAINMENT ISOLATION VALVE POSITION INDICATION (MANUFACTURER AND MODEL NUMBER VARIOUS)

a. Action Item Description

The following position switches monitor position of containment isolation valves external to the drywell and are required to be qualified for post-accident radiation dose only. Adequate environmental qualification documentation is not available.

<u>Plant Identifi- cation</u>	<u>Manufacturer/Model</u>	<u>Required Radiation Dose (rads)</u>
ZS-3704	Microswitch/DTF2-2RN-RH	2.7 E06
ZS-3705	Microswitch/DTF2-2RN-RH	2.7 E06
ZS-3728	Microswitch/DTF2-2RN-RH	2.7 E06

<u>Plant Identifi- cation</u>	<u>Manufacturer/Model</u>	<u>Required Radiation Dose (rads)</u>
ZS-3729	Microswitch/DTF2-2RN-RH	2.7 E06
ZS-4304	Microswitch/OPD-AR	2.9 E05
ZS-4305	Microswitch/OPD-AR	2.9 E05
ZS-4306	Microswitch/OPD-AR	1.5 E06
ZS-4307	Microswitch/OPD-AR	1.5 E06
ZS-4308	Microswitch/OPD-AR	1.5 E06
ZS-4311	Microswitch/DTF2-2RN-RH	1.5 E06
ZS-4312	Microswitch/DTF2-2RN-RH	1.5 E06
ZS-4313	Microswitch/DTF2-2RN-RH	1.5 E06
ZS-4331A	Target Rock/72V-004	5.6 E06
ZS-4331B	Target Rock/72V-004	5.6 E06
ZS-4332A	Target Rock/72V-004	7.5 E05
ZS-4332B	Target Rock/72V-004	7.5 E05
ZS-4333A	Target Rock/72V-004	1.3 E07
ZS-4333B	Target Rock/72V-004	1.3 E07
ZS-4334A	Target Rock/72V-004	1.3 E07
ZS-4334B	Target Rock/72V-004	1.3 E07
ZS-4640	NAMCo/SAI-131	1.1 E06
ZS-5703A	Microswitch/DTF2-2RN-RH	2.7 E06*
ZS-5703B	Microswitch/DTF2-2RN-RH	2.7 E06*
ZS-5704A	Microswitch/DTF2-2RN-RH	1.3 E07
ZS-5704B	Microswitch/DTF2-2RN-RH	1.3 E07
ZS-5718A	Microswitch/DTF2-2RN-RH	1.3 E07
ZS-5718B	Microswitch/DTF2-2RN-RH	1.3 E07
ZS-5719A	Microswitch/DTF2-2RN-RH	2.7 E06*
ZS-5719B	Microswitch/DTF2-2RN-RH	2.7 E06*

*Dose was reduced as a result of reevaluation of post-accident operating time.

b. Resolution

Position switches ZS-4331A and ZS-4331B through ZS-4334A and ZS-4334B have been determined to be qualified in accordance with Target Rock Test Report 2302, dated May 9, 1979.

Position switches for ZS-4640, ZS-5704A and ZS-5704B, and ZS-5718A and ZS-5718B were confirmed to not be qualifiable by engineering analysis and will be replaced with position switches qualified in accordance with 10 CFR 50.49 during or before the Cycle 8 refueling outage.

An evaluation of the radiation and thermal aging effects of the subcomponent materials of the remaining position switches was completed in June 1983. The results are as follows.

Position switches ZS-4304 through ZS-4308 are qualified for a total radiation dose of 3.0×10^6 rads and a thermal aging qualification of 30 years. Position switches ZS-3704, ZS-3705, ZS-3728, ZS-3729, ZS-4311 through ZS-4313, ZS-5703A and ZS-5703B, and ZS-5719A and ZS-5719B are qualified for a total radiation dose of 4.7×10^6 rads and a thermal aging qualification of 30 years.

c. Justification for Continued Operation

Continued station operation is justified for the following reasons.

- 1) Radiation doses were calculated using conservative, nonmechanistic models. Mechanistic release models will result in radiation releases that occur several hours after the postulated accident. Therefore, actual doses will be less than those calculated using such conservative assumptions.
- 2) The above position switches perform no automatic safety function; therefore, failure of these position switches will not result in a failure of an automatic safety system to perform its safety function.
- 3) Failure of a valve position switch is unlikely to mislead an operator because realistic harsh environment-induced failure modes will be apparent. Potential failures include either short circuits resulting in both "open" and "closed" lights on or open circuits resulting in both lights off; it is unlikely that a failure can occur resulting in the exact opposite valve position indication.
- 4) With the exception of the drywell cooling water system (see 7.b below), isolation valves are redundant. Failure of both valves would be required for containment integrity to be affected.

- 5) Any radioactive releases would be detected by effluent radiation monitors. Operator action would then result in system isolation at the radioactive release point, thus maintaining containment integrity.
- 6) These position switches are outside of primary containment and are harsh for radiation-only environments. The materials used in the contacts of position switches (such as phenolics) are, in general, acceptable for at least 10^6 rads.
- 7) Failure of these position switches will not result in the operators taking action affecting plant safety because of the following backup indication or knowledge of system design, construction, and principles of operation.
 - a) Position switch ZS-4640 provides control valve position indication for a reactor recirculation sample line isolation valve. This valve is normally closed and remains closed following a LOCA. Position indication of the upstream valve CV-4639 (also normally closed) is provided by ZS-4639 which is qualified for its postulated environmental conditions.
 - b) Position switches ZS-5704A, ZS-5704B, ZS-5718A, and ZS-5718B provide control valve position indication for the drywell cooling water system isolation valves. The drywell cooling water system is a closed system and does not communicate directly with the drywell atmosphere or penetrate the reactor coolant system (RCS) pressure boundary. Also, the valves associated with position switches ZS-5718A and ZS-5718B are backed up by check valves which further prevent or reduce the likelihood of uncontrolled radioactivity releases through this system.

33. TEMPERATURE ELEMENTS FOR DRYWELL ATMOSPHERE
 TEMPERATURE INDICATION (LEEDS & NORTHRUP MODELS
 8920-404-00-3-21 and 8197-10-S)

a. Action Item Description

Drywell atmosphere temperature is presently monitored by the following temperature elements (located in the drywell).

Model 8920-404-00-3-21

TE-4386E	TE-4386F
TE-4386G	TE-4386H
TE-4386J	TE-4386K
TE-4386L	TE-4386M

Model 8197-10-S

TE-4328E	TE-4328F
TE-4328G	TE-4328H
TE-4328J	TE-4328K
TE-4328L	TE-4328M

The temperature elements are manufactured by Leeds & Northrup. They are RTD type temperature elements and must be qualified for a total radiation dose of 4.3×10^7 rads (40-year normal plus 30-day LOCA) and drywell LOCA conditions (peak temperature 324F, peak pressure 62 psig, and 100% humidity). Documentation of qualification is not available.

b. Resolution

An evaluation was completed in July 1983 to identify the number of temperature elements required to representatively monitor drywell temperature. This evaluation concluded that the eight TE-4386 series temperature elements are sufficiently representative in location to provide acceptable drywell post-accident temperature location. The TE-4328 series temperature elements are special purpose RTDs that are used during integrated leak rate testing.

The eight TE-4386 series temperature elements will be replaced with Pyco-manufactured temperature elements qualified in accordance with 10 CFR 50.49 during or before the Cycle 8 refueling outage via DCR 1161.

c. Justification for Continued Operation

Continued station operation is justified for the following reasons.

- 1) Radiation doses were calculated using conservative, nonmechanistic models. Mechanistic release models will result in radiation releases that occur several hours after the postulated accident. Therefore, actual doses will be less than those calculated using such conservative assumptions.
- 2) This equipment performs no automatic safety function; therefore, failure of this equipment will not result in a failure of an automatic safety system to perform its safety function.

- 3) The temperature elements are located in various regions of the drywell such that the environment is different at each element. The probability of all elements failing is small. Because all elements are measuring temperature inside primary containment, the failure of any one element that would cause a grossly erroneous reading would be easily detected by comparison to other nearby elements and will not result in the operators taking action affecting plant safety.
- 4) For the accident (design basis LOCA) and the time frame of concern, saturation conditions will exist in the drywell such that post-accident drywell temperature can be approximated by use of existing qualified drywell pressure transmitters and steam table data.

34. PRESSURE TRANSMITTERS FOR MSIV LEAKAGE CONTROL SYSTEM
PRESSURE INDICATION (GE MODEL 555111DEAA4WCB)

a. Action Item Description

The MSIV leakage control system (LCS) pressure is presently monitored by pressure transmitters PT-8404A through PT-8404D (which monitor pressure between the MSIVs). They are GE Model 555111DEAA4WCB and sense pressure by means of a stainless steel diaphragm. The transmitters are located above the control rod drive repair room and must be qualified for a total radiation dose of 8.9×10^5 rads. Because of the equipment's post-accident safety function and its location, qualification for pressure, temperature, and humidity is not required. Documentation demonstrating qualification is not available.

b. Resolution

MSIV-LCS pressure provides information relative to system operation. A more direct indication of MSIV-LCS operation is provided by system flowrate. (Note: Pressure boundary indication will be addressed by a separate accident monitoring system upgrade.) This action item can be considered resolved after installation of NUREG 0588, Category I qualified flow sensors (see Action Item 10) during or before the Cycle 8 refueling outage via DCR 1095.

c. Justification for Continued Operation

Continued station operation is justified for the following reasons.

- 1) Radiation doses were calculated using conservative, nonmechanistic models. Mechanistic release models will result in radiation releases that occur several hours after the postulated accident. Therefore, actual doses will be less than those calculated using such conservative assumptions.
- 2) Failure of these components will not cause the failure of the MSIV leakage control system to function properly.
- 3) Failure of these instruments will not result in the operators taking action affecting plant safety because alternative indications of proper MSIV leakage control system operation exist (such as system exhaust blower run indication, system valve position, and status lights associated with system permissive switches).

35. FLOW TRANSMITTERS FOR CORE SPRAY FLOW INDICATION (GE MODEL 555-111BDAA3PDF)

a. Action Item Description

Core spray flow is presently monitored by flow transmitters FT-2130 and FT-2110. These transmitters are GE Model 555-111BDAA3PDF and are located in the RHR corner rooms in panels 1C-123 (FT-2110) and 1C-124 (FT-2130). They must be qualified for a 40-year normal plus 30-day post-accident radiation dose of 2.8×10^6 rads. Because of the equipment's post-accident safety function and its location, qualification for pressure, temperature, and humidity is not required. Documentation of qualification is not available.

b. Resolution

Flow transmitters FT-2130 and FT-2110 will be replaced with new flow transmitters qualified in accordance with 10 CFR 50.49 during or before the Cycle 8 refueling outage.

c. Justification for Continued Operation

- 1) Radiation doses were calculated using conservative, nonmechanistic models. Mechanistic release models will result in radiation releases that occur several hours after the postulated accident. Therefore, actual doses will be less than those calculated using such conservative assumptions.
- 2) These transmitters perform no automatic safety function; therefore, failure of these instruments will not result in a failure of an automatic safety system to perform its safety function.
- 3) Failure of these transmitters will not result in the operators taking action affecting plant safety because alternative verification of system flow can be indirectly determined through pump load indication via motor ammeter indication, system lineup via valve position check valve open indications from ZS-2118 and ZS-2138, and maintaining reactor vessel level. These indications are displayed in the control room.
- 4) If coolant injection is not adequate, reactor vessel level will start to drop. This will be indicated in the control room. Upon detection, the operator would take action to provide other means of coolant injection from either the redundant train or some other emergency core cooling system.

36. FLOW TRANSMITTERS FOR LPCI/RHR SYSTEM FLOW INDICATION
(BARTON MODEL 368)

a. Action Item Description

LPCI/RHR flow is monitored by flow transmitters FT-1971A and FT-1971B. These transmitters are Barton Model 368 and are located in the RHR corner rooms in panels 1C-129A (FT-1971A) and 1C-129B (FT-1971B). They must be qualified for a total dose of 2.8×10^6 rads (40-year normal plus 30-day LOCA). Because of the equipment's post-accident safety function and its location, qualification for pressure, temperature, and humidity is not required. Documentation of qualification is not available.

b. Resolution

These instruments will be replaced with flow transmitters during or before the Cycle 8 refueling outage qualified in accordance with 10 CFR 50.49 requirements.

c. Justification for Continued Operation

Continued plant operation is justified for the following reasons.

- 1) Radiation doses were calculated using conservative, nonmechanistic models. Mechanistic release models will result in radiation releases that occur several hours after the postulated accident. Therefore, actual doses will be less than those calculated using such conservative assumptions.
- 2) These transmitters perform no automatic safety function; therefore, failure of these instruments will not result in a failure of an automatic safety system to perform its safety function.
- 3) Failure of these transmitters will not result in the operators taking action affecting plant safety because alternative verification of system flow can be determined through pump load via motor ammeter indication, system lineup using valve position check valve open indications from ZS-1906 and ZS-2002, and maintaining reactor vessel level. These indications are displayed in the control room.
- 3) If coolant injection is not adequate, the reactor vessel coolant level will start to drop. This will be indicated in the control room. Upon detection, the operator would take action to provide other means of coolant injection from either the redundant train or some other emergency core cooling systems.

37. TEMPERATURE ELEMENTS FOR RHR HEAT EXCHANGER OUTLET TEMPERATURE INDICATION

a. Action Item Description

RHR heat exchanger outlet temperature is currently monitored by thermocouple temperature elements TE-1945C and TE-1945E. The manufacturer is NECI;

the model number is not available. These elements are located in the RHR corner room and are required to be qualified for a total dose of 5.9×10^6 rads (40-year normal plus 30-day LOCA). Because of the equipment's post-accident safety function and its location, qualification for pressure, temperature, and humidity is not required. Documentation of qualification is not available.

b. Resolution

Qualification by analysis has been determined to not be possible because of unavailable model number information and associated lack of traceability of or otherwise identifiable subcomponent materials information. The existing temperature elements will be replaced with temperature elements qualified to 10 CFR 50.49 requirements during or before the Cycle 8 refueling outage via DCR 1161.

c. Justification for Continued Operation

Continued station operation is justified for the following reasons.

- 1) Radiation doses were calculated using conservative, nonmechanistic models. Mechanistic release models will result in radiation releases that occur several hours after the postulated accident. Therefore, actual doses will be less than those calculated using such conservative assumptions.
- 2) This equipment performs no automatic safety function; therefore, failure of this equipment will not result in a failure of an automatic safety system to perform its safety function.
- 3) Temperature detectors (both RTDs and thermocouples) are relatively uncomplicated devices and each manufacturer model type is of similar construction and principle of operation. Because several qualified models exist (e.g., Pyco and Conax), additional reliability exists as to harsh environment post-accident operability. Also, in this case, the equipment qualification concern is limited to the post-accident radiation dose. The subcomponents that would be susceptible to

radiation degradation are the terminal blocks and lead wire insulation. Therefore, failure of the temperature element to provide its temperature dependent signal is unlikely because neither the lead wire nor the terminal block are subject to mechanical stress of a level sufficient to result in gross subcomponent failure.

- 4) Failure of these instruments (to provide a representative temperature-dependent signal) is unlikely as described above and will not result in the operators taking action affecting plant safety because alternative (see Item 5 below) means of determining instrument failure exist.
- 5) RHR heat exchanger outlet temperature provides information related to the operation of the RHR system. For this reason, the exact value of RHR heat exchanger outlet temperature is not required. Alternative means of monitoring RHR system heat exchanger performance can be determined from a combination of system lineup via valve position, RHR pump motor amperes indication, and RHR service water (heat exchanger tubeside) temperature indication (TE-1945B and TE-1945E).

38. PRESSURE SWITCHES FOR REACTOR VESSEL SAFETY RELIEF VALVE POSITION INDICATION (PRESSURE CONTROLS MODEL A-17-1N)

a. Action Item Description

The following 24 pressure switches are Pressure Controls Model A-17-1N and monitor the position of the reactor vessel safety relief valves (each of the eight safety relief valves is monitored by three pressure switches that provide a signal indicating an open valve using two-out-of-three logic).

PS-4400A,B,C	PS-4404A,B,C
PS-4401A,B,C	PS-4405A,B,C
PS-4402A,B,C	PS-4406A,B,C
PS-4403A,B,C	PS-4407A,B,C

These pressure switches are qualified for drywell design basis LOCA conditions with the exception of the direct effects of containment spray. Prior to qualification testing, spray deflectors were

installed in the test chamber to deflect the direct effects of the test chamber's spray system. The existence or adequacy of drywell structural devices performing a similar function at the DAEC requires investigation.

b. Resolution

The results of a walkdown that was performed during the Cycle 7 refueling outage has resolved this action item.

Pressure switches PS-4400A,B,C; PS-4401A,B,C; and PS-4403A,B,C through PS-4407A,B,C were found to be effectively shielded from direct spray effects by their sealed overhead junction boxes. Pressure switches PS-4402A,B,C were found to be effectively shielded by a combination of overhead sealed condulets, drywell HVAC ducting, and drywell structural components.

39. POSITION SWITCHES FOR SGTS ISOLATION DAMPER POSITION INDICATION (MICROSWITCH MODEL OPD-AR)

a. Action Item Description

The following six position switches monitor SGTS emergency damper positions within a harsh environment and lack adequate environmental qualification documentation: ZS-5825A,B; ZS-5815A,B; and ZS-7602A,B. These position switches are Microswitch Model OPD-AR and are located in the SGTS room. Position switches ZS-5825A,B and ZS-7602A,B must be qualified for a total integrated radiation dose of 2.1×10^6 rads (based on a distance of approximately 21.5 feet from the only major nearby radiation source). Position switches ZS-5815A,B must be qualified for a total dose of 8.0×10^6 rads (based on a distance of approximately 10.5 feet). Because of the equipment's post-accident safety function and its location, qualification for pressure, temperature, and humidity is not required. Qualification documentation is not available.

b. Resolution

An evaluation of the radiation and thermal aging effects of the subcomponent materials of position switches ZS-5825A,B and ZS-7602A,B was completed in

September 1983. These position switches were determined to be qualified for a total radiation dose of 3.0×10^6 rads and a thermal aging qualification of 30 years.

Position switches ZS-5815A,B will be replaced with switches qualified to the requirements of 10 CFR 50.49 during or before the Cycle 8 refueling outage.

c. Justification for Continued Operation

Continued station operation is justified for the following reasons.

- 1) Radiation doses were calculated using conservative, nonmechanistic models. Mechanistic release models will result in radiation releases that occur several hours after the postulated accident. Therefore, actual doses will be less than those calculated using such conservative assumptions.
- 2) These position switches perform no automatic safety function; therefore, failure of any of these position switches will not result in failure of an automatic safety system to perform its safety function.
- 3) Failure of a damper position switch is unlikely to mislead an operator because realistic harsh environment-induced failure modes will be apparent. Potential failures include either short circuits resulting in both "open" and "closed" lights on or open circuits resulting in both lights off; it is unlikely that a failure can occur resulting in the exact opposite damper position indication.
- 4) Damper positions in an incorrect or unknown position will not result in an uncontrolled or unacceptable radioactivity release because a bypass piping flowpath around the SGTS filters does not exist.
- 5) Also, position switches ZS-5815A,B indicate damper position on SGTS trains A and B. Failure of these position switches will not result in the operators taking action affecting plant safety because combined flow through the SGTS could be determined by flow indicators (FIC-5828A,B) on control room panels 1C-24A,B.

40. TERMINAL BLOCKS FOR PRESSURE SWITCHES USED TO MONITOR REACTOR VESSEL SAFETY-RELIEF VALVE POSITION

a. Action Item Description

These terminal blocks are 12-point GE Model EB-25 terminal strips and are located within sealed junction boxes (J1211 through J1216, J1218, and J1219). They are required to be qualified for a total integrated radiation dose of 4.3×10^7 rads (includes 40-year normal dose plus 30-days post-LOCA dose). Each of the eight terminal blocks is connected to three pressure switches (all three of that monitor the pressure downstream of one of the eight reactor safety-relief valves). Qualification documentation for this model terminal block is not available.

b. Resolution

The existing terminal blocks will be replaced with terminal blocks qualified to the requirements of 10 CFR 50.49 during or before the Cycle 8 refueling outage.

c. Justification for Continued Operation

Continued station operation is justified for the following reasons.

- 1) These terminal blocks supply electric power to equipment that provides display information only and are not associated with any automatic safety functions. Therefore, failure of any of these terminal blocks will not result in failure of an automatic safety system to perform its safety function.
- 2) Required radiation doses were calculated using conservative, nonmechanistic models. Mechanistic release models will result in radiation releases that occur several hours after the postulated accident. Therefore, actual doses will be less than those calculated using such conservative assumptions.
- 3) The terminal blocks are static devices and are not subject to any continuous or intermittent stress of an amount likely to cause failure. They were installed in 1979 and are located in sealed enclosures that provide protection from

harsh environment effects other than radiation. The terminal blocks are constructed of a filled phenolic material that is unlikely to fail from the effects of 2.5×10^7 rads radiation dose (5 years of normal operation plus 30-day post-LOCA dose).

- 4) Instrument failure because of terminal block failure will not result in the operators taking action affecting plant safety because alternative indications exist that would allow a check for confirmation of a stuck-open safety relief valve (i.e., relief valve discharge temperature, reactor vessel level, reactor pressure, suppression pool temperature, and suppression pool water level).

41. ASCO SOLENOID VALVE SV-4639 (MODEL 206-832-2RG) AND OKONITE POWER CABLE (600 V CROSS-LINKED ETHYLENE PROPYLENE)

a. Action Item Description

Solenoid valve SV-4639 is the pilot air supply valve for air-operated control valve CV-4639. Valve CV-4639 is the inboard recirculation system sample line isolation valve and a containment isolation valve. The solenoid valve uses an Okonite 600 V cable as a power supply cable. The solenoid valve and the power supply cable are located at an elevation of 800 feet in the drywell. This location has been determined to be subjected to an ambient temperature of approximately 220F, which is higher than the maximum ambient temperature (150F) for the drywell previously assumed in the thermal aging analysis.

The solenoid valve contains ethylene propylene elastomers. The ethylene propylene elastomers and the ethylene propylene cable insulation have a qualified life of approximately 2 years at 220F. The valve's elastomers and the solenoid valve's associated supply cable are at or near the end of qualified life; therefore, the solenoid valve cannot be considered qualified for post-accident operation.

b. Resolution

The ethylene propylene elastomers and the Okonite supply cable will be replaced, with materials qualified to the extent possible and practical (see Section III.D) for this application, during or before the Cycle 8 refueling outage.

c. Justification for Continued Operation

Continued station operation is justified for the following reasons.

- 1) Isolation valve CV-4639 is a normally closed valve; to open the isolation valve, solenoid valve SV-4639 has to be energized. Operation of CV-4639 is not required after an accident. If the elastomers of SV-4639 did fail, air leakage through SV-4639 would be through the exhaust port rather than through the port that operates CV-4639; therefore, CV-4639 would remain closed and maintain its containment isolation function.
- 2) In the unlikely event that isolation valve CV-4639 failed to shut because of failure of valve SV-4639, containment isolation would be maintained because the other isolation valve (CV-4640) that is outside containment would function.
- 3) The normal reactor sample point is through the reactor water cleanup (RWCU) system. CV-4639 is the isolation valve for the backup sample system that is only operated when the RWCU system is not available. Because CV-4639 is rarely operated, it is extremely unlikely that a LOCA will occur simultaneous with operation of CV-4639.

III. SUPPLEMENTAL INFORMATION

A. HIGH-PRESSURE COOLANT INJECTION SYSTEM

The following statement was included in Iowa Electric's response to IE Bulletin 79-01B (Reference 1).

An analysis of the HPCI system operation under the postulated accidents defined by NRC IE Bulletin 79-01B has shown that HPCI system components are not subjected to a harsh environment for those accidents requiring the HPCI system to function. The results of the analysis are as follows:

1. The postulated accident for which the HPCI system must function is a LOCA. Because of containment of the LOCA, the environmental effects on the HPCI system under LOCA are limited to exposure to increased radiation dose.
2. For a large-break LOCA, RCS depressurization would initiate HPCI rapidly. However, HPCI would not contribute significantly to core cooling due to the rapid RCS depressurization, resulting in low HPCI flow, and the subsequent initiation of LPCI and core spray systems to achieve the core cooling function. Because the HPCI function is only momentary for the large-break LOCA, the radiation exposure of HPCI components due to this size LOCA for the period permitting HPCI flow would not exceed the present HPCI equipment qualification envelope.
3. For a small-break LOCA, HPCI system operation is initiated by gradual reduction of reactor vessel level or containment high pressure. The HPCI initiation setpoint of low reactor vessel level will cause HPCI flow to reestablish reactor vessel level and prevent fuel exposure and subsequent fuel damage. If fuel damage is prevented, the radiation dose to which the HPCI components are exposed under a sustained small-break LOCA is less than 1×10^4 rads. Because this integrated dose is less than our harsh/nonharsh environment boundary condition of 1×10^5 rads, the HPCI system can be considered to be in a nonharsh environment under small-break LOCA conditions.

4. A study by General Electric on the effects of loss of dc power on the emergency core cooling function was transmitted to the NRC on November 1, 1978. This study demonstrates that BWR-4 plants with the LPCI configuration at the DAEC will not experience fuel damage, even assuming a loss of the HPCI function is coupled with a dc power source failure. This report reinforces our contention that fuel damage and subsequent high-radiation exposure to the HPCI components under small-break LOCA conditions are improbable events, and need not be considered in the environmental conditions for which the HPCI system must function.
5. Although the above concludes that the HPCI system exists in a nonharsh environment for LOCA, the HPCI components were included in the scope of our current review because of their importance as a major safety system.

Because the above analysis is believed to be realistic, HPCI system components except containment isolation valves and those needed to isolate a HPCI steam line break have been classified as being in mild environments. Accordingly, except for those components mentioned above, HPCI system components are not included in this report.

This position on HPCI was reviewed and found to be technically acceptable as stated in Appendix G4 of TER C5257-499 (for the DAEC), dated August 18, 1982.

B. DELETION OF HIGH-ENERGY LINE BREAK IN RHR CORNER ROOMS

As discussed in Section III.B and illustrated in Table III-2 and Figure III-4 of Reference 1, the original HELB analysis for the DAEC evaluated a break in the RHR corner rooms. Subsequent investigation indicates that the high-energy line in the RHR corner rooms is operated at high-energy conditions only during the RHR steam-condensing mode of operation. This mode of operation, as described in Section 5.4.7.2.5 of the DAEC UFSAR, is an alternative shutdown mode where steam is condensed using an RHR heat exchanger. In the commercial operation of the DAEC to date, this mode of operation has not been used. Any future use of this operating mode is limited to specific special case applications and represents a situation where the pipe in the RHR

corner room is operated at high-energy conditions less than 1% of the time that the plant is in operation. Accordingly, it is not considered appropriate to evaluate a HELB and its associated environment effects in the RHR system condensing piping. In accordance with this position, the equipment located in the RHR corner rooms will not be environmentally qualified for HELB conditions. This is reflected in the Appendix B3 equipment qualification summary sheets.

This position on RHR corner room HELBs was reviewed and found technically acceptable as stated in Appendix C-4 of TER C5257-499 (for the DAEC), dated August 18, 1982.

C. EVALUATION OF HARSH ENVIRONMENT EQUIPMENT AGING EFFECTS

As committed in Reference 2, an evaluation of aging degradation effects on harsh environment equipment has been initiated. One of two types of evaluations was conducted depending on purchase order date.

For equipment purchased prior to May 23, 1982, the DOR guidelines were used as a basis for the evaluation. For cases where preaging was accomplished as part of the equipment's qualification program, the testing procedure and resultant qualified life were evaluated for acceptability. Where preaging was not accomplished, an analysis was conducted to identify subcomponent materials known to be susceptible to thermal and/or radiation degradation. The limiting subcomponent material was used to determine the equipment's qualified life.

For equipment purchased after May 23, 1980, NUREG 0588, Category I guidelines were used as a basis for the aging evaluation. The qualification test procedure and resultant qualified life were evaluated for acceptability.

The evaluations described above were summarized on an aging evaluation form identified by the manufacturer's model code described in Section V (where a description is provided of how this code is used to form the equipment and evaluation numbers). The resultant qualified life for each manufacturer's model type has been incorporated into the report evaluation sheets of Appendix B3. Where the qualified life is known to have a dependency on periodic surveillance and/or subcomponent replacement, an explanatory note is provided at the bottom of the Appendix B3 evaluation sheets.

NOTE: This approach on aging was reviewed and found to provide a satisfactory response to the NRC concern as stated in Section 4.3.6 of TER C5257-499 (for the DAEC), dated August 18, 1982.

Aging evaluation forms for many manufacturer model types were revised in 1983 to reflect the following.

- o Incorporation of recently obtained materials aging information (in some cases, allowing an extension in qualified life)
- o Review and comparison of previously assumed design continuous temperatures to actual plant location temperatures (In cases where the equipment's local ambient temperature exceeds the previously assumed ambient temperature, a lower qualified life resulted.)
- o Clarification or additional detail on maintenance/surveillance requirements supporting the equipment's qualified life (such clarification or additional detail would be reflected on the equipment SCEW)

In general, aging-related maintenance/surveillance recommendations (identified as notes at the bottom of the report evaluation sheets of Appendix B3) were conservatively determined in terms of calendar intervals (e.g., ASCo solenoid valves located in the steam tunnel would require replacement of ethylene propylene elastomers every 4.5 years). These maintenance/surveillance recommendations will be implemented in a manner consistent with refueling outage schedules. Because of conservatism associated with aging analysis methodology, it is concluded to be acceptable to delay aging-related maintenance/surveillance activities without detrimental effect on the equipment's environmental qualification if a schedule outage is delayed for other reasons. For example, it would be acceptable to extend the replacement interval of the ASCo solenoid valve O-rings from 4.5 to 5 years if an outage is delayed for 6 months for other reasons.

Iowa Electric is in the process of implementing the Appendix B3 aging-related maintenance/surveillance recommendations at the DAEC. Implementation is expected to be complete before the end of the Cycle 8 refueling outage.

D. METHOD OF COMPLYING WITH 10 CFR 50.49 FOR REPLACEMENT PARTS/EQUIPMENT

1. 10 CFR 50.49, Subsection (l) states, "replacement equipment must be qualified in accordance with the provisions of this section unless there are sound reasons to the contrary." Such replacement equipment is assumed to include replacement parts (i.e., equipment subcomponents).

10 CFR 50.49, Subsection (f) allows qualification by identical equipment testing, by similar equipment testing with a similarity analysis, or by analysis in combination with partial type test data.

To the extent possible, replacement parts and equipment (for existing equipment at the DAEC within the scope of 10 CFR 50.49) will be selected on the basis of acceptable environmental qualification as described in Items 2 and 3 below.

2. Where the existing equipment has been qualified to NUREG 0588, Category I requirements, replacement equipment will be chosen to the extent possible to have an equivalent or level of qualification documentation meeting Revision 1 of Regulatory Guide 1.89 (when finalized) such that environmental service condition requirements are met or exceeded and testing methodology is comparable.

If a replacement part, identical to the one originally tested by the vendor, is no longer available, relevant partial test data from other sources will be evaluated to determine a substitute part's acceptability (e.g., evaluation of use of the substitute part/material in a different or later model's qualification program).

Where the qualified life of a replacement part is impractically short for its DAEC application as a result of overconservatism (such as low accelerated aging temperature or short accelerated aging time) in the vendor's artificial aging program, relevant partial test data from other sources will be evaluated to extend the replacement part's qualified life to a reasonable but conservative value. For example, solenoid valve SV-4639 (manufactured by ASCo) is located in a high normal ambient temperature (approximately 220F) region of the drywell (see Section II, Action

Item 41). ASCo tested equivalent solenoid valves with viton and ethylene propylene terpolymer (EPDM) elastomers for 18-1/4 days at 250F temperature. Using Arrhenius analysis and the ASCo test data, a qualified life of 64 days for EPDM (activation energy 0.94 eV) and 73 days for viton (activation energy 1.04eV) results. [In general, viton is more resistant to thermal aging than EPDM as long as restriction (less than 20 to 30 Mrads) on total integrated radiation dose are observed.] A qualified life for viton greater than 40 years can be demonstrated using test data for viton from the Parker Seals O-Ring Handbook ORD-5700 (1982). Therefore, replacement of the viton elastomers at least every 20 years would be a conservative conclusion.

3. Where the existing equipment has been qualified to the DOR guidelines, replacement equipment/parts qualified to the requirements of NUREG 0588, Category I or Revision 1 of Regulatory Guide 1.89 (when finalized) will be selected when available. If not available, replacement equipment/parts with the best available qualification documentation will be selected such that as a minimum, partial test data in conjunction with analysis can be used to demonstrate post-accident operability (see Section II, resolution of Action Item 19 valve operator motor brakes). Cases of replacement parts that are no longer available or which have an overly restrictive qualified life will be addressed as described in Subsection III.D.2 above.

E. HARSH ENVIRONMENT EQUIPMENT ADDITIONS

As indicated in previous submittals, the DAEC environmental qualification program is subject to ongoing evaluation as a result of activities (e.g., design changes implementation, self-audits, and incorporation of new environmental qualification test reports, material aging data, maintenance/surveillance information, and other documentation). Equipment previously classified as mild environment items and required to function (or not fail in a manner detrimental to safety) during a design basis LOCA or other HELB accidents were reviewed again to confirm their mild environment status. As a result of these activities, the following additional harsh environment equipment items have been identified.

Report Evaluation
Number Establishing
Acceptable

<u>Equipment Plant Identification</u>	<u>Environmental Qualification</u>	<u>Mechanism for Identifying the Equipment</u>
SV-4304, 4305	A499-05	Mild environment review effort
TE-2446A,B; TE-2447A,B; TE-2451A,B	N070-02	Mild environment review effort
PS-7333A,B; PS-7334A,B	U075-01	Mild environment review effort
TB-GRPB	A000-02	Review of new design changes
SV-4594A,B	T020-07	Review of new design changes

F. LIST OF EQUIPMENT REQUIRING ENVIRONMENTAL QUALIFICATION, SORTED BY SYSTEM (APPENDIX A)

The list of equipment sorted by system is included as Appendix A to this report.

This list differs in two basic ways from the system sorts submitted with References 2, 3, and 4. First, consistent with the scope of 10 CFR 50.49, only harsh environment equipment is included. Second, to avoid ambiguity and for greater compatibility with the plant maintenance program, each piece of equipment has been classified with its fluid system rather than with its engineered safeguards feature (ESF) system function. For example, RWCU system containment isolation motor operator MO-2700 has been reclassified as part of the RWCU system rather than primary containment isolation and nuclear steam supply shutoff system. The information relating to the ESF function is retained on the equipment's report data sheet in the "function" data block (see Section V, Data Block 9).

NOTE: The list of systems originally requested by NRC Bulletin 79-01B (and submitted with References 1 through 4) was reviewed and found technically acceptable as stated in Appendix C-1 of the TER (for the DAEC), dated August 18, 1982. Appendix A of this September 1983 report is intended to be an update of the list of equipment requiring environmental qualification in accordance with 10 CFR 50.49 and includes the new equipment identified in Section III.E.

IV. ACCIDENT MONITORING INSTRUMENTATION

NOTE: The system classification used to identify instruments used for post-accident monitoring has been changed in this report from safety display instrumentation to accident monitoring instrumentation. This change was initiated for consistency with existing industry terminology.

The first and second semiannual environmental qualification reports (References 3 and 4) provided a list of accident monitoring instruments and associated environmental qualification summary sheets based on a review of the existing DAEC emergency procedures. References 2 and 3 also indicated that a final list of accident monitoring instruments (requiring environmental qualification) would be completed by January 1, 1983, but that this was dependent on implementation of revised emergency operating procedures during the Fall 1982 refueling outage [subsequently rescheduled to Spring 1983 (see Section I)]. This implementation was in turn dependent on review and approval by the NRC of the symptomatic emergency operating procedure guidelines developed by the BWR Owners Group for NUREG 0737, Item I.C.1.

Efforts to finalize the list of accident monitoring instruments requiring environmental qualification have been affected by the following activities.

- o Issue by the NRC of Generic Letter 82-09, dated April 20, 1982, providing clarifications on environmental qualification requirements of operator display instrumentation. This letter states that:
 - a. All display instrumentation referenced in the emergency procedures need not be identified.
 - b. Licensees need only identify and have available qualification documentation on those operator display instruments which are safety-related.
 - c. The staff will defer review of the basis for safety classification until other NRC activities [such as preparation of emergency procedures (NUREG 0799), control room design review (NUREG 0700), upgrading of accident monitoring instrument (Regulatory Guide 1.97 and NUREG 0737)] are implemented.

- d. For new or upgraded instrumentation with a required operation date prior to the equipment qualification deadline (of 10 CFR 50.49), qualification must be accomplished by the equipment qualification deadline.
- o Submittal by Iowa Electric to the NRC on May 28, 1982, of the plan for the Integrated Scheduling of Plant Modifications for the DAEC (Reference 7). This plan described Iowa Electric's intentions relative to emergency response facilities.
- o Continued participation by Iowa Electric in BWR Owners Group efforts to develop symptomatic emergency operating procedure guidelines for NUREG 0737, Item I.C.1. These guidelines and two subsequent revisions have been submitted to the NRC for review. NRC review and approval was pending in December 1982.
- o Issue by the NRC of supplement to NUREG 0737 via Generic Letter 82-33, dated December 17, 1982 (formerly SECY 82-111, Staff Recommendations on Requirements for Emergency Response Capability). This document recommended that licensees develop and implement an integrated program plan for resolution of emergency response capability-related concerns (including emergency operating procedure revisions and accident monitoring instrumentation efforts). Section 6 of this supplement states that currently installed accident monitoring instruments are acceptable even if presently not environmentally qualified (if the instrument measures over the range indicated in Regulatory Guide 1.97, Revision 2). However, completion of environmental qualification would eventually be required in accordance with the pending rule (10 CFR 50.49).
- o Accident monitoring instrumentation continues to be the subject of other Iowa Electric licensing activities (as described above and elsewhere). For purposes of this report, Regulatory Guide 1.97, Revision 2 and the associated BWR Owners Group position were used as guidance in establishing (to the extent possible) the interim list of DAEC accident monitoring instrumentation requiring environmental qualification (see Appendix A).

V. DESCRIPTION OF REPORT DATA SHEETS AND EVALUATION SHEETS

Appendix B3 is an updated summary of environmental qualification information for all equipment required to perform a safety function in a harsh environment. This summary takes the form of Equipment Qualification Report Data Sheets (Figure V-1) and Evaluation Sheets (Figure V-2). These sheets are in a format similar to that requested in IE Bulletin 79-01B. The data sheets summarize individual equipment data and environmental qualification requirements. The evaluation sheets summarize the acceptability of the equipment's environmental qualification program.

The data and evaluation sheets are organized and presented by manufacturer model type (i.e., by the evaluation number described below). Where identical types of equipment exist (i.e., same manufacturer and model), qualification applies generically. For these types of equipment, a complete evaluation sheet has been prepared once for the generic type of equipment.

In Appendix B3, the evaluation sheet precedes the data sheets for all equipment of that generic type.

A description of the information presented on the data sheets is provided below. The numbers refer to the circled numbers on the sample data sheet (Figure V-1).

1. EVALUATION NO

Number of Form XXXX-YY which is unique for each manufacturer model type of equipment. This is the primary identifying number associated with the evaluation-related data for all equipment of a given manufacturer model type. The "XXXX" is the EPRI data bank number (from Reference 4) associated with the manufacturer of the equipment. The "YY" is a two-digit number associated with the equipment model.

1A. EQ EQUIPMENT NO

Number of Form XXXX-YY-ZZZ which is unique for each piece of equipment. This is the primary identifying number for equipment-related data. The "XXXX" and "YY" are formed consistent with the evaluation number. The "ZZZ" is an arbitrarily assigned three-digit number unique to each piece of equipment of that manufacturer and model type.

2. COMPONENT

Generic name for the piece of equipment (e.g., motor-operated valve, pressure transmitter).

3. MANUFACTURER

Name of equipment manufacturer (not necessarily supplier) of the equipment as determined from vendor drawings, nameplate data during walkdowns, or vendor contacts.

4. MODEL NUMBER

Manufacturer-supplied model number as determined from vendor drawings, nameplate data during walkdowns, or vendor contacts. If a model number is not available, then a serial number or vendor drawing number is provided.

5. SHEET NUMBER, REVISION, DATE

Self-explanatory information provided for control purposes.

6. PLANT ID

Plant-unique equipment identification number consistent with that appearing on the plant's piping and instrument diagram, instrument index, and equipment lists.

7. SYSTEM

Name of system in which the equipment is physically located and for which the equipment performs its safety function. A list of systems (containing equipment requiring environmental qualification) is provided in Table V-1. Equipment not belonging to any one system (e.g., electric cable) is included in the system referred to as ancillary components.

8. PURCHASE ORDER

The word "APED" (if a General Electric purchase), Bechtel purchase order number, an Iowa Electric purchase order number, a DCR number, or the word "field" (for field purchases) as determined from the instrument index, equipment list, or vendor documents.

9. FUNCTION/SERVICE

Chosen consistent with the system function, to be one of the following: reactor shutdown, primary containment isolation (includes system isolation resulting in HELB leak detection), reactor core cooling, containment heat removal, post-accident monitoring, mitigate radioactive release (i.e., maintain release of radioactivity to environment within 10 CFR 100 limits), and support (i.e., perform auxiliary support function).

10. ACCURACY: SPEC

Required or specified accuracy as determined from the FSAR or the equipment's technical specification. This is applicable to instruments only where accuracy is important to the equipment's safety function.

11. NOT USED

12. LOCATION

Abbreviation of room or area location containing the equipment as determined by location drawings or by walkdown. A list of locations is provided in Table V-2.

13. FLOOR ELEVATION

Floor elevation of the room or location containing the piece of equipment. The combination of location and floor elevation sufficiently locates the equipment for determining environmental condition requirements.

14. FLOOD LEVEL ELEVATION

Post-accident flood level for the equipment's location as determined from an approved calculation. For location not subject to post-accident flooding, NA (not applicable) is indicated.

15. ABOVE FLOOD LEVEL

"Yes" or "no," indicating whether the equipment will be above the post-accident flood level. This is determined from a review of equipment location design drawings and a review of project design criteria.

Note: For the following accidents (Items 16 through 22), "yes" indicates whether the equipment is essential to either mitigating the accident or achieving safe shutdown. "No" indicates if neither of these conditions are met.

16. LOCA

Design-basis loss-of-coolant accident (worst-case recirculation line break within drywell)

17. MSLB

Main steam line break (pipe break in main steam system outside drywell)

18. FWLB

Feedwater line break (pipe break in main feedwater system)

19. HPCI

High-pressure coolant injection (pipe break in high-pressure coolant injection system steam supply)

20. RCIC

Reactor core isolation cooling (pipe break in reactor core isolation cooling system steam supply)

21. RWCU

Reactor water cleanup (pipe break in reactor water cleanup system)

22. SCRAM

NA; this field is not presently used.

23. QUALIFIED LIFE BEGINS

The year qualified life begins is conservatively chosen as 1974 (the initial year of DAEC plant operation), unless determined to be more recently installed as a result of a review of recent plant design changes. This date is used to schedule equipment or subcomponent replacement determined to be necessary based on the aging effects evaluation effort of Section III.C. This installation date is subject to further refinement as a result of an ongoing program to develop a maintenance data base for the DAEC.

24. ENVIRONMENT

"Harsh" or "mild" describing the type of post-accident environment the equipment is subjected to before or during the time the equipment performs its safety function. To be classified as a harsh environment, a location must meet either of the following two criteria:

1. The post-LOCA integrated radiation dose over the required operating time exceeds 1×10^5 rads.
2. The nonradiation parameters as a result of a HELB (temperature, pressure, humidity, etc) exceed the values established as design parameters for the heating, ventilating, and air conditioning (HVAC) design at the location. The design parameters for the HVAC are defined by the existing plant design specifications.

All other equipment situations are designated as mild environments.

25. EQ SYSTEM NO

A two-digit system code determined from Item 7 and Table V-1.

26. P&ID

Piping and instrument diagram drawing number and grid coordinates describing functional location of the equipment.

27. LOC DWG

Location drawing number and grid coordinates showing physical plant location of the equipment.

28. ELEC SCHEME

Electrical scheme and sheet number showing electrical power supply schematic for the equipment. The scheme and sheet number should be separated by a slash (e.g., E122/4).

29. VDR ID

Vendor identification number (applicable to General Electric-supplied equipment, Target Rock solenoid valves, ASCo solenoid valves, and other vendors where this information is readily available).

30. MFGR MODEL REF

A vendor drawing, walkdown reference, or other source of information which indicates manufacturer and model number.

31. REQUIRED OPERATING TIME

Required post-accident operability period (either 1 hour or 30 days) as determined from knowledge of the equipment's safety function. Equipment which must operate only once early in the accident or for a very short period post-accident (such as automatic protection systems which quickly place the plant in a stabilized condition) will have an operating time of 1 hour. (The 1 hour is chosen to provide substantial margin.) Equipment whose function requires long-term operation (beyond the point of reaching the initial stabilized condition) will have an operating time of 30 days. This required operating time includes any period of time during which a postulated harsh environment-induced failure of the equipment could affect performance of other equipment safety functions.

32. TEMP (F)

Peak post-accident temperature (time-dependent curve for drywell and torus) to which the equipment is subjected before or during the performance of its safety function.

33. PRESSURE

Peak post-accident pressure in psig (time-dependent curve for drywell) to which the equipment is subjected before or during the performance of its safety function.

34. RELATIVE HUMIDITY

Peak post-accident relative humidity (%) to which the equipment is subjected before or during the performance of its safety function.

35. CHEMICAL SPRAY

Description of spray ("demin water" for inside drywell or "NA" for outside drywell) to which equipment is subjected before or during the performance of its safety function.

36. SEISMIC

NA

37. RADIATION

Integrated radiation dosage in rads consistent with operating time (Item 31).

38. AGING

40 years

39. SUBMERGENCE

"Yes" or "NA" consistent with Item 15.

40. REMARKS (OPTIONAL)

Any explanatory remarks related to Items 31 through 39 may be provided here.

A description of the information presented on the evaluation sheets is provided below. The numbers refer to the circled numbers on the sample evaluation sheet (Figure V-2).

1 THROUGH 5. Refer to description of information appearing on data sheet.

11. ACCURACY: DEMO Demonstrated instrument accuracy as determined, if available, from qualification test reports or vendor catalogues. This is applicable to instruments only and is otherwise indicated as "NA"

31W THROUGH 39W. REQUIRED ENVIRONMENT

The most limiting (worst-case) value of the environmental parameter as determined from a review of Items 31 through 39 of the associated data sheets for all equipment of that manufacturer model type.

40. Not used.

41 THROUGH 49. DOCUMENTATION REFERENCE REQUIRED

A three-digit number associated with the last three numbers of the EQ equipment number which determined the worst-case environmental parameter (Items 31W through 39W).

50. Not used.

51 THROUGH 59. QUALIFICATION

The value or explanatory note describing the environmental parameter for which the equipment has been demonstrated (by test or analysis) to remain operable. For aging, a qualified life is indicated with a reference to an explanatory note if the qualified life is contingent upon periodically performed maintenance and/or surveillance.

60. Not used.

61 THROUGH 69. DOCUMENTATION REFERENCE QUAL

A letter reference corresponding to a qualification document in the reference list.

70. Not used.

71 THROUGH 79. QUALIFICATION METHOD

Method (type test, analysis, or combination) by which qualification for the environmental parameter being considered was demonstrated.

80. Not used.

81 THROUGH 89. OUTSTANDING ITEMS

"None" or a note reference describing the environmental qualification deficiency.

90. REFERENCE

Description of document referenced in Items 61 through 69.

91. NOTES

Explanatory notes referenced in Items 51 through 59 or 81 through 89.

92 THROUGH 95. Not used.

96. NUREG 0588 APPLICABLE.

"Yes" or "no" corresponding to whether the equipment was purchased after or before May 23, 1980.

①

Owner:
 Facility:
 Unit:
 Docket No:
 EQ Equip No: ①A

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No.
 Revision: ⑤
 Date:

EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks ④①
System: ⑦	Operating Time	③①	
Plant I.D. Number: ⑥	Temperature (°F)	③②	
Component: ②	Pressure (PSIG)	③③	
Manufacturer: ③	Relative Humidity (%)	③④	
Model Number: ④	Chemical Spray	③⑤	
Purchase Order Number: ⑧	Seismic	③⑥	
Function/Service: ⑨	Radiation (Rad)	③⑦	
Accuracy: Spec: ⑩	Aging	③⑧	
Location: ⑫	Submergence	③⑨	
Floor Elevation: ⑬			
Flood Level Elevation: ⑭			
Above Flood Level: Yes: No: ⑮			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (°F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:	Submergence		
Floor Elevation:			
Flood Level Elevation:			
Above Flood Level: Yes: No:			

Accidents:	LOCA ⑮	MSLB ⑮	FWLB ⑮	HPCI ⑮	RCIC ⑮	RWCU ⑮	SCRM ⑮
Qual Life Begins: ⑮	Environment: ⑮	EQ Sys No: ⑮	P&ID: ⑮				
Loc Dwg: ⑮	Elec Scheme: ⑮	VDR ID: ⑮					
Mfgr Model Ref: ⑮							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins:	Environment:	EQ Sys No:	P&ID:				
Loc Dwg:	Elec Scheme:	VDR ID:					
Mfgr Model Ref:							

Sheet No:
Revision
Date:

5

1
Owner:
Facility:
Unit:
Docket No:

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: 2 Manufacturer: 3 Model Number: 4 NUREG 0588 Applicable: 96 Accuracy: Demo: 11	Operating Time	31W		51	41		61	71	81
	Temperature (°F)	32W		52	42		62	72	82
	Pressure (PSIG)	33W		53	43		63	73	83
	Relative Humidity (%)	34W		54	44		64	74	84
	Chemical Spray	35W		55	45		65	75	85
	Seismic	36W		56	46		66	76	86
	Radiation (Rad)	37W		57	47		67	77	87
	Aging	38W		58	48		68	78	88
	Submergence	39W		59	49		69	79	89

DOCUMENTATION REFERENCES	NOTES
90	91

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET (SAMPLE)

V-10

TABLE V-1

DUANE ARNOLD ENERGY CENTER
ENVIRONMENTAL QUALIFICATION SYSTEM LIST

1. Deleted
 2. Control rod drive (mild only)
 3. Deleted
 4. Deleted
 5. Main steam line isolation valve leakage control
 6. High-pressure coolant injection
 7. Automatic depressurization
 8. Core spray
 9. Residual heat removal
 10. Standby gas treatment
 11. Standby ac power supply (mild only)
 12. DC power supply (mild only)
 13. Residual heat removal service water
 14. Emergency service water (mild only)
 15. Deleted
 16. Reactor protection
 17. Reactor core isolation cooling
 18. Engineered safeguard rooms heating and ventilating
 19. Control building heating and ventilating (mild only)
 20. Standby diesel generator room ventilation (mild only)
 21. Emergency service water pump room heating and ventilating (mild only)
 22. Intake structure heating and ventilating (mild only)
 23. Deleted
 24. River water supply (mild only)
 25. Electrical and control panels (mild only)
 26. Pumphouse drain sump
 27. Leak detection
 28. Deleted
 29. Containment atmosphere control
 30. Deleted
 31. Deleted
 32. Ancillary components
 33. Deleted
 34. Nuclear boiler
 35. Deleted
 36. Accident monitoring instrumentation
 37. Post-accident sampling
 38. Drywell cooling water
 39. Radwaste sump
 40. Reactor recirculation
 41. Reactor water cleanup
 42. Reactor building cooling water
-

The inclusion of a system in the above listing does not imply that the complete system is essential or that all components within the system are essential. Only those specific components within a system, by which the safety actions specified in Section X.B are performed, are essential.

TABLE V-2

LIST OF LOCATIONS CONTAINING SAFETY-RELATED EQUIPMENT

<u>Description of Location</u>	<u>Name of Location As It Appears on Report Data Sheet</u>
Above CRD repair room	A CRD rr
Control building, control room	CB ctl rm
Control building H&V room	CB H&V rm
Diesel generator room	DG room
Drywell	Drywell
Essential switchgear room	E SWGR rm
H&V control valve room	H&V control valve rm
HPCI room	HPCI room
Intake structure	Intake str
Northeast corner room	NE crnr rm
Northwest corner room	NW crnr rm
Offgas stack building	Offgas stack
Outside turbine building	Outside TB
Pumphouse	Pumphouse
RCIC room	RCIC room
RHR valve room	RHR vlv rm
Radwaste building	Rad bldg
Radwaste tank room	Radwaste tank room
Reactor building, west	RB-W
Reactor building, north	RB-N
Reactor building, south	RB-S
Reactor vessel	RV
Reactor water cleanup pump room	RWCU pump room
Reactor water cleanup heat exchanger room	RWCU heat exch room
Recombiner H&V room	Recombiner H&V room
Southeast corner room	SE crnr rm
Southwest corner room	SW crnr rm
Standby gas treatment room	SGT room
Steam tunnel	Steam tunnel

Table V-2 (continued).

<u>Description of Location</u>	<u>Name of Location As It Appears on Report Data Sheet</u>
Torus room, north	Torus room north
Torus room, south	Torus room south
Turbine building	Turbine bldg
Turbine building, north	Turbine bldg north
Turbine building, south	Turbine bldg south
125 V battery room	125V battery room
250 V battery room	250V battery room
24 V battery room	24V battery room
Various	Various

NOTE: When the equipment is located in a panel or motor control center, the equipment location is followed by the panel or MCC designation.

VI. TER CATEGORY I.b EQUIPMENT ITEMS (QUALIFICATION
PENDING MODIFICATION)

TER Category I.b equipment items have been identified as action items in previous submittals to the NRC. Section II provides a description of each unresolved action item, method of intended resolution, schedule, and justification for continued operation.

The TER comments/concerns for each of the 24 Category I.b equipment item cases were evaluated. Except where otherwise noted (by references in the action item column to an explanatory note), reaffirmation of justification for continued operation is provided by the following cross-index of Category I.b equipment item numbers to Section II action item numbers. (References to explanatory notes at the end of this section are also provided in the left-hand column when necessary to advise of incorrect statements/assumptions appearing in the TER.)

TER Equip- ment Item	Equipment Description (Plant Identification)	Section II Action Item Number
7.	Limitorque Model SMB-3 (dc motor) with motor brake (MO-2239)	19
9.	Limitorque Model SMB-2 (dc motor) with motor brake (MO-1909)	19
10.	Limitorque Model SMB-2 (ac motor) with motor brake (MO-1908, MO-2238, MO-4627, MO-4628) (see Note VI.A)	19
11.	Limitorque Model SMB-5 (ac motor) with motor brake (MO-1905, MO-2003) (see Note VI.A)	19
12.	Limitorque Model SMB-6 (ac motor) with motor brake (MO-2135, MO-2115) (see Note VI.A)	19 (see Note VI.B)
15.	Limitorque Model SMB-2 (ac motor) with motor brake (MO-2000, MO-2137) (see Note VI.A)	19 (see Note VI.B)
18.	Limitorque Model SMB-2 (ac motor) with motor brake (MO-2117) (see Note VI.A)	19

TER Equip- ment		Section II
Item	Equipment Description (Plant Identification)	Action Item Number
19.	Electrodyne Model TN-24-400 (MO-1904, MO-2004)	23
25.	ASCo Model 8320A6 (SV-1963, SV-2033, SV-1966, SV-2037)	24 (see Note VI.D)
29.	ASCo Model HB8302C25RU (SV-4640)	24 (see Note VI.D)
31.	ASCo Model HT831665 (SV-5815A,B; SV-5825A,B; SV-5801A,B; SV-7602A,B)	24 (see Note VI.D)
32.	ASCo Model 831665 (SV-4309)	24 (see Note VI.D)
33.	ASCo Model 831665 (SV-4303)	24 (see Note VI.D)
34.	ASCo Model 831665 (SV-4311, SV-4308, SV-4312, SV-4313, SV-4306, SV-4307)	24 (see Note VI.D)
50.	ITT Barton Model 289 (FIS-2111, FIS-2131, PDIS-1971A,B)	17 (see Note VI.C) 18 (see Note VI.C)
51.	SK Model 2096518550 (FM-8408A,B,C,D)	10
63.	Barksdale Model P1H-M85SS-V (PS-8404A,B,C,D)	30 (see Note VI.D)
64.	GE Model 552032HKZZ2 (PDT-1947, PDT-2046)	6
87.	Industrial Engineering Equipment Company Model TFZCP15900 (CVI Drawing A7075900) (1S-1061A,B)	28 (see Note VI.D)
88.	Westinghouse motor Type TEFC (1V-AC-11, 1V-AC-12)	14
89.	Siemens motor Model 2CH6-041-1U (1K-25A,B)	12 (see Note VI.D)
94.	Industrial Engineering Equipment Company Model CT32-23 (TE-5805A,B; TS-5836A,B)	27 (see Notes VI.D and VI.E)

TER Equip- ment Item	Equipment Description (Plant Identification)	Section II Action Item Number
102.	Rosemount Model 104MA23ABBB (TE-4443A,B,C,D; TE-4444A,B,C,D; TE-4445A,B,C,D; TE-4446A,B,C,D; TE-4477A,B; TE-4478A,B; TE-4479A,B; TE-4480A,B)	29
103.	Penn Model A-19ABB-6 (TS-5808A,B)	25

Section VI Notes:

VI.A These motor operators were incorrectly assumed in the TER to utilize Peerless ac motors. In actuality, they utilize Reliance ac motors.

VI.B TER comments and IELP response to these comments for TER equipment Items 12 and 15 are provided below.

TER Comment (TER Equipment Items 12 and 15)

Due to the relatively nonharsh environment at the installed location and the extensive radiation testing performed on Limitorque motorized valve actuators, qualification can be established by experience with the exception of qualified life.

The licensee has not provided for review (applies to TER Equipment Item 12 only), the documentation or a technical basis to support the claim of a 40-year qualified life estimate (Bechtel Chron 6775).

IELP Response

With the exception of the motor brakes, Limitorque operators utilizing motors with Class B insulation have been evaluated for thermal and radiation aging effects. This evaluation considered known aging properties of subcomponent materials (such as electrical insulation, torque switches, position switches, and lubricants) and identified maintenance and surveillance requirements. The results of this evaluation are summarized in Engineering Analysis of Limitorque dc Class B and ac Class B Motor Valve Operators, dated March 1982 (Bechtel Chron 6775) and Bechtel Aging Evaluation Form L200-00B, dated July 8, 1982 (Bechtel Chron 8109). Franklin Research Center did not previously request these documents for review.

Section VI Notes (continued)

Note: Bechtel Aging Evaluation Form L200-00B has been revised for reasons described in Section III.C. See appropriate Limitorque SCEW sheets for revision number, date, and Bechtel chron number.

VI.C TER comments and associated IELP response for TER equipment Item 50 are presented below.

TER Comments

"Reference 3252" applies to the Barton 288A and 289A; "Reference 3468" is a summary lacking the details needed by an independent reviewer to draw conclusions; licensee has not provided Bechtel Aging Evaluation Form I204-04 (7-8-82), Bechtel Chron 8107 for review and evaluation. It is concluded that the Model 288 or 289 has not been analyzed or tested and, therefore, lacks qualification documentation.

IELP Response

"Reference 3252" (ITT Barton's Report R3-288A-1, dated May 9, 1980, IEEE Standard 344-1975 Seismic and Radiation Qualification Tests on ITT Barton's Differential Pressure Indicating Switches Models 288A and 289A) applies to Model 289 as well as to Model 289A on the basis of similarity. The only difference between Models 289 and 289A is a metal clip added to reduce setpoint drift [see EDS Problem File 0460-067-002 (Bechtel Chron 6863) and QSR-029-A-01 (Bechtel Chron 7719)]. The presence of the clip (which is not susceptible to radiation damage) does not affect the report's applicability to Model 289.

"Reference 3468" is not identified in the TER. This is assumed to be "Reference 5083," BWR Equipment Qualification Summary, ITT Barton Model 289A Differential Pressure Switches, September 23, 1980, QSR-029-A-02. A copy of this document was inadvertently transmitted to the NRC for review in lieu of BWR Equipment Qualification Summary, ITT Barton Model 289, dated October 9, 1980, QSR-029-A-01, because of similarity in report identification numbers and Barton model numbers.

The following critical aging susceptible subcomponent materials have been identified within the Model 289.

PVC lead wire insulation
Phenolic switch
Viton O-ring
Hydrocarbon oil fill fluid
Neoprene gasket

Section VI Notes (continued)

IELP Response (continued)

These subcomponent materials have been evaluated for radiation and aging effects as documented on Bechtel Aging Evaluation Form I204-04, Revision 1, dated January 16, 1983. This aging evaluation establishes a 40-year qualified life and a radiation level qualification of 3.0×10^6 rads. The results were determined by applying the Arrhenius model to the above Model 289 subcomponent materials.

A maintenance/surveillance program is being initiated for the Model 289 to assure performance degradation is minimized from thermal aging of the hydrocarbon oil.

Aging Evaluation Form I204-04 was revised on August 13, 1983, to further clarify surveillance requirements (see Section III.C).

The ITT Barton report, Reference 3252, in conjunction with Aging Evaluation Form I204-04 provides sufficient documentation of ITT Barton Model 289 qualified life and level of radiation qualification.

- VI.D This action item has been recently resolved as described in the resolution portion of Section II for this action item; therefore, justification for continued operation for this equipment item is no longer considered necessary.
- VI.E Activities related to resolution of this action item have determined that these temperature switches were manufactured by Essex Controls. They were supplied by Industrial Engineering Equipment Company (as Type CT-32-23) to CVI (who supplied the equipment for the DAEC).

VII. TER CATEGORY II.a EQUIPMENT ITEMS (QUALIFICATION NOT ESTABLISHED)

Classification of equipment in this category was the result of FRC's determination that insufficient documentation was provided for review.

The comments/concerns for each of the 56 TER Category II.a equipment items were reviewed as described below and in the following subsections. (Where necessary, a background statement or paragraph is provided to support understanding of the TER comments.)

To simplify this response, Category II.a equipment items have been arranged in generic groups. For example, each of the ten Limitorque equipment items received similar comments regarding unavailable EQ documentation; therefore, the responses have been generically provided.

For 28 of the 56 TER equipment items, documentation presently exists in the DAEC environmental qualification central files which resolves the TER comment/concern; therefore, a response was developed which both identifies the document (by title and a document control number) and summarizes the document's content relative to its method of resolution.

The remaining 28 TER equipment items include DAEC equipment tentatively identified as safety display instruments in previous NRC submittals. Finalization (to the extent now possible) of the list of DAEC accident monitoring instruments requiring environmental qualification is described in Section IV. Using the results of the Section IV approach, 12 of the remaining 28 TER equipment items were determined to be both included in the list of Section IV accident monitoring instruments and to require additional environmental qualification documentation (see Subsections VII.L, VII.M, and VII.N). In each of these cases, a reference to a Section II action item number, description, method of intended resolution and schedule, and justification for continued operation is made. The remaining 16 TER equipment items (see Subsection VII.O) do not satisfy the present criteria for accident monitoring instruments and no longer require environmental qualification.

A. LIMITORQUE MOTOR OPERATORS

TER Comment 1 (TER Equipment Items 1, 2, 5, 6, 8, 14, 16, 121, 122, and 124)

The licensee has not provided documentation from the manufacturer that states the cited test reports are applicable to these equipment items.

IELP Response to TER Comment 1

Equipment Items 1 and 2 address Limitorque motor-operated valve actuators equipped with ac motors using Class H insulation. Equipment Items 14, 16, and 124 address Limitorque motor-operated valve actuators equipped with ac motors using Class B insulation. Equipment Items 5, 6, 8, 121, and 122 address Limitorque motor-operated valve actuators equipped with dc motors using Class B insulation. A review of DAEC environmental qualification records indicates that equipment Item 124 (MO-2701) was in error and should indicate MO-2701 as a dc motor with Class B insulation. The SCEW for MO-2701 has been revised and this equipment item should now be addressed accordingly.

Because Limitorque motor operators are all similar in principle of operation, each Limitorque test report is supportive (to some extent) of motor operator qualification. Limitorque motor operators differ in size, position switch/torque switch materials, and type of motor and insulation class. Limitorque motor operators of all available sizes are generically qualified as described in Limitorque Report B00058. Differences in position switch and torque switch materials (which are located within the motor operator's weatherproof housing) are addressed by an evaluation of radiation and thermal aging effects (which is documented on the Bechtel Aging Evaluation Form referenced on the SCEW sheet). Motors of a given type and insulation class are qualified by the appropriate Limitorque test report as summarized below and in the following subsection.

<u>Test Report</u>	<u>FRC Reference</u>	<u>Motor Type</u>	<u>Insulation Class</u>
B0003	662	ac	B
B0009	1063	dc	H
600376A	1064	ac	H
600456	706	ac	H
B0027	2876	ac	H

1) TER Equipment Items 1 and 2 (ac Class H)

The test reports summarized above show that motors of a similar type and insulation class have been qualified by type test. In addition, for cases where a test report utilizing a motor with Class B insulation is referenced, Class H insulation is considered qualified to the identical environmental conditions for which a Class B insulated motor is qualified because the materials of construction of

Class H insulation are equal to or superior to those used in Class B insulation for radiation and thermal transient conditions. This is supported by a similar statement made by Limitorque Corporation when addressing the like situation for other motors in its letter to Iowa Electric dated April 22, 1982 (Bechtel Chron 7555).

Please note that the TER evaluation section (5f) for these equipment items quoted material in error from our action Item 16 in the January 15, 1982, semi-annual report on environmental qualification (TER Reference 15). This action item is applicable only to dc motors with Class B insulation and should not be referenced for ac motors with Class H insulation.

2. TER Equipment Items 14 and 16 (ac Class B)

Limitorque Corporation, in a letter to Iowa Electric dated April 22, 1982 (Bechtel Chron 7555), has stated that Qualification Report B0003 is applicable to the motor operators included in these equipment items. The applicable SCEWs also reference Bechtel Engineering Analysis of Limitorque Insulation Class B Motor Operators, dated March 26, 1982 (Bechtel Chron 6775). This analysis was performed specifically to provide the documentation establishing the similarity between the motors tested in the test reports (see Section A) and the motors considered qualified by the reports.

Please note that the TER evaluation section (5f) for these equipment items quoted material in error from our Action Item 16 in the January 15, 1982, Semi-Annual Report on Environmental Qualification (TER Reference 15). This action item is applicable only to dc motors with Class B insulation and should not be referenced for ac motors with Class B insulation.

3. TER Equipment Items 5, 6, 8, 121, 122, and 124 (dc Class B)

The applicable SCEWs for these equipment items reference Bechtel Engineering Analysis of Limitorque Insulation Class B Motor Operators, dated March 26, 1982 (Bechtel Chron 6775). This analysis was performed specifically to provide the documentation establishing the similarity between the motors tested in the test reports (see Section A) and the motors considered qualified by the reports.

TER Comment 2 (TER Equipment Items 1, 2, 5, 6, 8, 14, 16, 121, 122, and 124)

The licensee has not provided for review, the documentation or the technical basis to support the claim of a 40-year qualified life estimate.

IELP Response to TER Comment 2

The required documentation for motor operators with Class H insulation motors was documented in Bechtel Aging Evaluation Form L200-00H, dated July 8, 1982 (Bechtel Chron 8109).

The required documentation for motor operators with Class B insulation motors was documented in Bechtel Aging Evaluation Form L200-00B, dated July 8, 1982 (Bechtel Chron 8109).

These two aging evaluation forms document review of thermal aging and radiation test data from the Limitorque test reports and application of the data to DAEC equipment locations. Valve operators with Class B and Class H insulated motors were originally analyzed for maximum (and assumed continuous) normal ambient temperatures of 104 and 150F, respectively. Maintenance requirements to support qualified life conclusions were based on manufacturer recommendations. Four cases of local ambient temperatures above 150F were discovered (two valve operators at 160F maximum, one at 180F, and one at 240F). As a result, the aging evaluation forms were revised to reflect this information and for reasons described in Section III.C.

TER Comment 3 (TER Equipment Item 1)

On Page 3a of this review, the licensee has made reference to "Remark 22" which we have been unable to locate in the documentation submitted.

IELP Response to TER Comment 3

The reference to "Remark 22" was in error in the September 3, 1981, response to NRC Safety Evaluation Report. The remarks column should have been blank for these items; none of the remarks given for Appendix A of that response are applicable. This is confirmed by review of Paragraph IV.A.1.d of the September 3, 1981, response which defines the purpose of the remarks column as follows:

Reference is made in the remarks column to notes which specifically address the deficiencies identified for each component in the SER. For all components identified as deficient for aging, refer to Section III-3.7 for a discussion of the aging program.

Because these components were identified in Appendix C of the June 3, 1981 SER as deficient only for aging, no remark was required.

B. BARTON MODEL 289 PRESSURE SWITCH

ITT/Barton Model 289, TER Equipment Item 49

TER Comments (NRC Qualification Category)

Reference 3252 applies to the Barton 288A and 289A; Reference 3468 is a summary lacking the details needed by an independent reviewer to draw conclusions; licensee has not provided Bechtel Aging Evaluation Form I204-04 (7-8-82), Bechtel Chron 8107 for review and evaluation. It is concluded that the Models 288 or 289 have not been analyzed or tested and, therefore lack qualification documentation.

IELP Response

However, "Reference 3252" (ITT Barton's Report R3-288A-1, dated May 9, 1980, IEEE Standard 344-1975 Seismic and Radiation Qualification Tests on ITT Barton's Differential Pressure Indicating Switches Models 288A and 289A) applies to Model 289 as well as to Model 289A on the basis of similarity. The only difference between Models 289 and 289A is a metal clip added to reduce setpoint drift [see EDS Problem File 0460-067-002 (Bechtel Chron 6863) and QSR-029-A-01 (Bechtel Chron 7719)]. The presence of the clip (which is not susceptible to radiation damage) does not affect the report's applicability to Model 289.

"Reference 3468" is not identified in Section 6 of the TER. This is assumed to be Reference 5083, BWR Equipment Qualification Summary, ITT Barton Model 289A Differential Pressure Switches, September 23, 1980, QSR-029-A-02. A copy of this document was inadvertently transmitted to the NRC for review in lieu of BWR Equipment Qualification Summary, ITT Barton Model 289, dated October 9, 1980, QSR-029-A-01, because of similarity in report identification numbers and Barton model numbers.

The following critical aging susceptible subcomponent materials have been identified within the Model 289.

- PVC lead wire insulation
- Phenolic switch
- Viton O-ring
- Hydrocarbon oil fill fluid
- Neoprene gasket

These subcomponent materials have been evaluated for radiation and aging effects as documented on Bechtel Aging Evaluation Form I204-04, Revision 1, dated January 16, 1983 (Bechtel Chron 10258). This aging evaluation establishes a 40-year qualified life and a radiation level qualification of 3.0×10^6 rads. The results were determined by applying the Arrhenius model to the above Model 289 subcomponent materials.

A maintenance/surveillance program is being initiated for the Model 289 to assure performance degradation is minimized from thermal aging of the hydrocarbon oil.

Bechtel Aging Evaluation Form I204-04 was revised on August 13, 1983, to further clarify surveillance requirements (see Section III.C).

The ITT-Barton report, "Reference 3252," in conjunction with Bechtel Aging Evaluation Form I204-04 provides sufficient documentation of ITT-Barton Model 289 qualified life and level of radiation qualification.

C. BARTON MODEL 763 PRESSURE TRANSMITTER

ITT-Barton Model 763 Transmitter (TER Equipment Item 55)

Background

This equipment was added (DCR 933) for post-accident monitoring of torus water level. It is located in the torus room (north) where qualification for a total integrated radiation dose of 1.3×10^7 rads (normal plus 30-day post-LOCA) is required.

TER Comment

Licensee provided FRC with a copy of ITT-Barton Qualification Test Procedure Document 9999.3154.2. Licensee did not submit ITT Barton Letter 556, dated March 19, 1982; Bechtel Aging Evaluation Form I204-01, dated July 8, 1982; and telecon T. Brendle (Bechtel) to J. Doyen (Barton), dated March 25, 1982 for review and evaluation. FRC concluded that licensee's citations and conclusions are not consistent with ITT-Barton Document 9999.3154.2.

IELP Response

This equipment performs an accident monitoring instrument function. Because of the location in the torus room and post-LOCA accident monitoring function, only post-accident (30-day) radiation dose and aging are required to be considered for environmental qualification.

Previous qualification was based on the documents identified in the TER comment above. These documents (which were not requested for review) utilize test information provided by ITT-Barton relative to radiation and aging qualification and an overly conservative activation energy of 0.6 eV.

Environmental qualification of the Barton 763 model is presently established based on a review of Barton Test Report R3-763-6, dated September 1982 (Vendor Print 11186-212-J-37351-21-1) entitled, ITT-Barton Model 763 Gage Pressure Electronic Transmitter Qualification Test Report. This report demonstrates the adequacy of the Model 763 to perform its specified functions before, during, and after the postulated DAEC service conditions. The tests performed in accordance with IEEE Standard 323-1974 and NUREG 0588 requirements were performed in the following sequence.

1. Accelerated aging (1,830 hours at 125C)
2. Radiation exposure (200 megarads total integrated dose)
3. Seismic simulation (OBE and SSE levels of 9.0 g and 12.5 g, respectively)
4. Design basis event simulation (LOCA and high-energy line break)

Qualified life of the Model 763 transmitter is based on results obtained by applying the Arrhenius model to accelerated aging test parameters. The Arrhenius model requires that the activation energies of the Model 763 transmitter materials be identified and an overall transmitter activation energy be assigned. The activation energies of the materials range from 0.78 eV (metal film resistors) to 1.90 eV (Mica capacitors). Accordingly the limiting activation energy is 0.78 eV. The transmitter with the exception of the transmitter's O-rings (ethylene propylene terpolymer) were subsequently subjected to accelerated aging for 1,830 hours. The O-rings were deemed incapable of withstanding 1,830 hours and were replaced 1,555 hours into the test. Therefore, the O-rings received only 275 hours of accelerated aging. The test's accelerated aging program parameters are summarized below.

Base Parameters

Transmitter test time (except for O-rings), hours	1,830
O-ring test time, hours	275
Test temperature, °C	125 (257F)
Limiting transmitter activation energy (excluding O-ring), eV	0.78
O-ring activation energy, eV	0.95

Applying these parameters to the Arrhenius model, Bechtel Aging Evaluation Form I204-01, Revision 0, documents that the qualified life of the Model 763 transmitter, including O-rings, at the maximum normal service temperature of 104F is at least 40 years.

To address potential dose rate synergistic effects of ethylene propylene resulting from its torus room application, Aging Evaluation Form I204-01 was revised (see Section III.C) on August 10, 1983, to require periodic replacement of the ethylene propylene O-rings every 20 years.

Therefore, the above evaluation in conjunction with the qualification test results of the Model 763 transmitter as documented in Barton Report R3-763-6 establish the transmitters qualification for DAEC application.

D. FENWAL MODEL 350030 TEMPERATURE CONTROL UNIT (TER EQUIPMENT ITEM 66)

Background

Resolution of environmental qualification Action Item 22 (see Section II) states that the electronic controllers of the Fenwal units will be relocated to a mild environment area but the metallic sensors (which are not susceptible to radiation damage) would remain at their present location.

TER Comment

It should be noted that the 30-day operating requirement and 1.6×10^8 rad dose level is significant. The licensee must identify the part number/model number of the metallic sensor and provide evidence to support the position that no radiation-sensitive materials exist.

IELP Response

Each temperature sensor unit consists of a sensor (Fenwal Catalog 35680-4-310 for the 310F units and Catalog 35680-4-255 for the 255F units) and an extension cable assembly (Part 5921-1). An analysis of radiation and thermal aging effects has determined that the limiting subcomponent material of the sensor units is the extension cable insulation (asbestos) which is acceptable for use at radiation doses up to at least 4.8×10^8 rads. This analysis is documented on Bechtel Aging Evaluation Form F081-02, dated October 8, 1982 (Bechtel Chron 10191).

E. GE ELECTRIC HEATER (TER EQUIPMENT ITEM 69)

Background

The GE heater assembly Model 47C518675 was qualified for radiation by analysis (Bechtel Chron 5814). Bechtel Aging Evaluation Form G080-42, dated June 18, 1982 (Bechtel Chron 8105) documents thermal aging qualification.

TER Comment

Heater qualification by analysis lacks technical information such as functional test results, actual test data, anomalies, and deficiencies for an independent reviewer to verify the equipment qualification status. The thermal aging evaluation was not made available for review.

IELP Response

Section 5.1 of the DOR guidelines states that for equipment located in an area requiring post-accident radiation qualification only, radiation qualification may be accomplished by analysis. In Section 5.3, the guidelines provided that in the absence of actual tests, the radiation qualification may be determined by analyzing the effect of radiation environment on the materials used in the equipment. Therefore, radiation qualification may be established by demonstrating that postulated worst-case integrated radiation doses are below the level at which equipment subcomponent materials and subcomponent functionability are affected.

For a piece of equipment as simple in operation as an electric heater, no active, moving function is performed. Therefore, other than continued insulating ability of the extension wire insulation, no other performance characteristics need be considered (the wire insulation is the only organic subcomponent).

The radiation and thermal aging qualification of the heaters was determined in accordance with the above guidelines. In summary, the limiting subcomponent material is polyalkene electric insulation which was found to be qualified for at least 40 years (even when continuously exposed to a maximum normal temperature of 130F) and a total integrated radiation dose of 1×10^8 rads. Requiring functional test results, test anomalies, and test deficiencies for this equipment item application goes beyond the requirements of the DOR guidelines.

F. NAMCO MODEL EA740 POSITION SWITCH (TER EQUIPMENT
ITEM 70 AND 71)

Background

Environmental qualification of this equipment is based on NAMCO EA740 Qualification Report, Revision 1, dated February 22, 1979 (Vendor Print E57-1-1, 2-1) and Bechtel Aging Evaluation Form N007-03, dated July 8, 1982 (Bechtel Chron 8111).

TER Comment 1

The qualification test report states that the switch was mounted in a test chamber and attached by means of a threaded pipe (conduit) through which the lead wires were passed. The threaded pipe had been sealed with teflon tape. The test laboratory noted no attempt was made to qualify the connection method. Because licensee has not identified any sealing method or that there is a seal, adequate similarity between equipment and test specimen is not established.

IELP Response to TER Comment 1

To support responses required for NRC Bulletin 79-01B, a walkdown was conducted on March 24 through 28, 1980 (during a scheduled outage), to inspect equipment located in the drywell, steam tunnel, and other locations which are inaccessible during plant operations. The purpose of the walkdown was to determine nameplate information and to identify any equipment conditions that would impact environmental qualification capability. Specific direction provided to the walkdown team members included instruction regarding existence of gaskets, firmness of mounting, and detection of any condition which could result in equipment degrading in a harsh environment. These NAMCO switches are each electrically connected via a tight conduit connection. No abnormalities were detected during the

March 1980 walkdown. Therefore, adequate similarity between DAEC equipment and the NAMCo test specimen is established. Also, DCR 895 installed NAMCo EA-740 position switches; FCR 895-7-0 replaced NAMCo switch original gaskets with silicon rubber gasket. Prior to closure of DCR 895, DAEC maintenance staff verified that conduits were sealed from the limit switch to its junction box with SEMCo PR-855 silicone RTV foam prior to closure of DCR 895 (DCR 895 Package Index Item 41.0-53). The conduit connection itself provides adequate shielding against high-energy line break effects. Completely filling the conduit with silicone RTV foam ensures acceptable level of qualification at this interface.

TER Comment 2

The qualification report states that heat aging was accomplished at 200F for 200 hours; however, the correlation between these conditions and qualified life is not known.

IELP Response to TER Comment 2

Namco has issued a new revision to Qualification Report QTR-111, dated October 1, 1981. This revision continues to be applicable to position switch Model EA-740. The report documents an accelerated aging test of 408 hours at 120C (248F). Namco concludes in the report a qualified life of 7.8 years at 50C (122F) for elastomeric parts using the above accelerated aging data and a conservative activation energy of 0.8 eV. However, Namco also recommends replacement of elastomers at 3-year intervals and the contact block at 20-year intervals.

The current aging evaluation form revision concludes (based on best available industry aging data) a qualified life of 40 years using Arrhenius techniques and a maximum continuous temperature of 150F for each of the nonmetallic subcomponent materials (silicone rubber gasket, ethylene propylene O-ring, and phenolic contact block). The aging evaluation form also concludes that the manufacturer recommended replacement intervals are conservative and reasonable for the DAEC application.

Note that position switch ZS-4639 was replaced with Namco Model EA-180 in 1981. Because the limiting materials in both Models EA-740 and EA-180 are the same, the above conclusions are applicable.

G. LIMITORQUE VALVE OPERATOR POSITION TRANSMITTERS (TER EQUIPMENT ITEMS 76 AND 77)

Background

In References 3 and 4, these position transmitters (ZT-1947 and ZT-2046) were indicated to be qualified based on a knowledge of the equipment's subcomponent materials, function, principle of operation, and verbal input (in the form of a telecon) from Limitorque Corporation. More detailed documentation was being pursued.

TER Comment

Because the telecon is not substantiated by a materials list or detailed drawing submitted by the manufacturer, it cannot be considered documented evidence of qualification.

IELP Response

Subsequent to the final preparation of Reference 4, Limitorque (in response to Iowa Electric Purchase Order 56766, dated March 31, 1982) transmitted a letter (Bechtel Chron 7972) dated June 17, 1982. This letter identified these position transmitters as 25 watt, 1,000 ohm Ohmite Model H potentiometers and provided materials information. Both position transmitters were confirmed to require qualification for harsh environment effects of radiation only; an evaluation of radiation and thermal aging effects determined these position transmitters (which consist of metallic and ceramic materials) to be acceptable for radiation doses up to at least 5×10^9 rads. This analysis is documented on Bechtel Aging Evaluation Form 0026-01, dated September 20, 1982 (Bechtel Chron 10192).

H. NECI MODEL N145C3023 (TER EQUIPMENT ITEMS 104 AND 105)

Background

Post-accident environmental qualification of NECI temperature element Model N145C3023 was based on test data provided in GE's NEDO-24267-1, Supplemental Results of Qualification Data Search for DAEC, dated June 1980 (Bechtel Chron 2572) and the fact that the equipment will perform its safety function (i.e., exceed its setpoint value) prior to exceeding its qualification test value.

TER Comment

The equipment qualification summaries in the GE document lack the technical information needed for an independent reviewer to verify the equipment qualification status. Information such as functional testing results, actual test data, anomalies, deficiencies, and conclusions are lacking; therefore, the GE document cannot be considered evidence of qualification. Also, the establishment of a setpoint temperature and the degree of accuracy for this device does not constitute evidence of qualification for a steam, pressure, and radiation accident environment.

IELP Response

Section 5.1 of the DOR guidelines states that "the choice of qualification method employed for a particular application of equipment is largely a matter of technical judgment based on such factors as: (1) severity of the service conditions; (2) structural and material complexity of the equipment; and (3) degree of certainty required in the qualification procedure."

Section 5.2.5 states that "operational models tested should be representative of the actual application requirements. ... Failure criteria should include instrument accuracy requirements based on the maximum error assumed in the plant safety analysis."

Section 8.0 directs that qualification "records should describe the qualification method in sufficient detail to verify that all of the (DOR) guidelines have been satisfied."

NRC Generic Letter 82-09, dated April 20, 1982, in its attached Clarifications on Environmental Qualification Requirements, Number 8 (1-hour minimum operating time) states that "....test data and analysis may be used to qualify equipment to the required operating time plus an appropriate margin. The 1-hour margin requirement need not be applied. However, subsequent failures should be shown to not be detrimental to plant safety."

These temperature detectors (Type T, copper constantan, dual-element thermocouples) are used for HELB detection in areas of the plant outside of the drywell. A high ambient or differential temperature will cause the appropriate system isolation valve to close, thereby terminating the accident.

These temperature detectors operate exclusively for HELB detection (i.e., they provide no input to any process control system and they are not identified as accident monitoring instruments). Also, the leak detection system, once initiated, will continue to cause system isolation even if the detection variables instrumentation indicates a return to normal. Therefore, failure of these temperature detectors (after performance of their safety function) is neither detrimental to safety nor will it be misleading to the operators.

The GE document (NEDO 24267-1) summarizes the results of functional testing of both elements of a representative (same model) dual-element temperature detector from 40F to approximately 350F. This functional testing was accomplished after exposure to a high temperature (156F) and high relative humidity (90%) environment for 1 hour. During the functional testing, both thermocouple elements performed acceptably with percent error actually decreasing (0.25% to 0.04% and 0.0% to 0.071%) with increased temperature (40.00F to 349.66F). The test summary also provides results of acceptable response time testing.

Postulated HELBs outside the drywell do not exceed 300F temperature, 1.5 psig pressure, and are terminated within 11 seconds by system isolation. Because of the nonexistence of fuel failure, no significant radiation doses result from the HELB. Although this model thermocouple was tested to only 7 inches water column pressure, other similar model thermocouples (such as Pyco's Type T dual-element detector) have been acceptably tested as high as 113 psig. Pressure is not considered a critical environmental qualification parameter for this safety function application and because of the small equipment size and because of the thermocouple's simple principle of operation.

Also, note that radiation dose concerns are limited to that received over a 40-year plant design life (this equipment has no design basis LOCA safety function). Thermal and radiation aging concerns were previously addressed by a conservative surveillance requirement to visually inspect the temperature detector subcomponents every refueling cycle for signs of aging degradation (Reference 3, SCEW 281).

As a result of such an inspection conducted during the 1983 refueling outage, it was determined that this model thermocouple contains no organic materials subject to radiation and thermal aging. The limiting subcomponent

material was found to be a ceramic (similar to steatite) terminal block. Bechtel Aging Evaluation Form N070-02 was revised on August 10, 1983, to incorporate this information (see Section III.C).

The GE document test summary in conjunction with the above analysis demonstrates environmental qualification acceptability of this NECI Model N145C3023 temperature detector. To require a more detailed qualification test report for further evaluation would exceed the requirements of the DOR guidelines as modified by NRC Generic Letter 82-09.

I. PYCO MODEL 02-9039-08-6 (TER EQUIPMENT ITEM 106)

Background

Environmental qualification of this model is based on Pyco Qualification Test Report 770831 (Bechtel Chron 7229), dated August 31, 1977, in conjunction with Bechtel Aging Evaluation Form P427-01 (Bechtel Chron 8115). This Pyco qualification program tested four dual-element RTDs, three single-element thermocouple assemblies, and one dual-element thermocouple assembly. During simulated LOCA testing, Units 1, 3, 4, and 5 exhibited abnormal behavior; Unit 3 ceased operation completely.

TER Comment 1

The model number cited on the licensee's SCEW is not correlated to any test specimen; therefore, there is no information provided in the licensee's submittal which establishes that the items tested is the same model number as is installed in the plant. In addition, the licensee has not stated whether the device is an RTD or thermocouple.

Because of the anomalies which existed during testing, unless traceability to a successful specimen can be made by the licensee, this equipment item is considered deficient regarding acceptable testing.

IELP Response to TER Comment 1

The test report covers qualification tests conducted on Pyco's typical RTD and thermocouple assemblies. The DAEC thermocouple Model 02-9039-08-6 was not specifically tested, but Pyco advises it is similar in all essential respects to the tested thermocouple assemblies. Materials of construction are the same. The singular difference is

that the tested models have spring-loaded and enclosed junctions and Model 02-9039-08-6 has an exposed sealed junction. On the basis of similarity to tested models, Model 02-9039-08-6 was determined to be qualified for DAEC applications.

The testing anomalies indicated in Report 770831 were associated with the following units.

Unit 1: RTD
Unit 3: Thermocouple Type K (chromel-alumel)
Unit 4: Thermocouple Type E (chromel-constantan)
Unit 5: RTD

The test report attributed moisture intrusion as the failure cause. This test anomaly is not considered as affecting thermocouple qualification for the DAEC application because:

The moisture encountered in the simulated LOCA test was created by a chemical spray (3,000 ppm boric acid in a solution with 0.064 molar sodium thiosulfate buffered with sodium hydroxide) whereas only demineralized water moisture is present in the DAEC application. In relative terms of electrical conductivity, the chemical spray is conductive; demineralized water is nonconductive. Accordingly, the intrusion of small amounts of demineralized water moisture would not be expected to affect thermocouple performance. Pyco considers both the test models and Model 02-9039-08-6 moisture-resistant, but because of the sealed junction design, the latter is more moisture-resistant than the former.

Also, the DAEC model is a Type T (copper-constantan) thermocouple (in accordance with vendor Print APED G31-2704). Unit 7 (the only Type T thermocouple tested in the program) performed acceptably during each step or phase of the qualification program. Because only two of the five thermocouples tested exhibited anomalies, no common mode failure concerns were identified; therefore, because of similarity to the Unit 7 test model, the DAEC model thermocouples were determined to be qualified.

TER Comment 2

The test report does not provide a basis for accelerated aging or provide a qualified life. The licensee's SCEW states that the qualified life is 28 years based on Bechtel Aging Evaluation Form P427-01, dated July 8, 1982 (Bechtel

Chron 8115). However, this document has not been provided for review. Because the report does not discuss these details, this item is considered deficient for aging and qualified life assessment based on materials evaluation not being supplied or accomplished by the test report.

IELP Response to TER Comment 2

Pyco's Test Procedure 810713, dated April 5, 1982 (Chron 7393), which is applicable to the DAEC Pyco models, notes that the limiting component is GE SR80 varnish (methyl silicone). The report also gives an activation energy of 0.96 for this varnish. In accordance with Pyco Test Report 770831, dated August 31, 1977 (Chron 7229), test units were aged 168 hours at 121C. Based on the above information, qualified life was conservatively concluded to be 28 years at 104F maximum ambient for these elements using Arrhenius techniques. Pyco is currently in the process of requalifying these temperature elements to NUREG 0588, Category I criteria in accordance with the above test procedure because previous testing was to earlier standards (preliminary indications from Pyco are that the testing phase has been successfully completed and the report will be available the fourth quarter of 1983). Upon receipt of results of the qualification test, the qualified life will be revised if appropriate.

J. GE ELECTRICAL PENETRATION (TER EQUIPMENT ITEM 118)

Background

Previous NRC submittals (References 3 and 4) have identified GE Qualification Test for FO1 Electric Penetration Assembly, dated April 30, 1971 (Bechtel Chron 6898) as a reference for environmental qualification of the DAEC electric penetrations.

TER Comment 1

The test report is for a Type FO1 penetration which is not the same as the installed penetrations, Type NS-02, -03, -04. It should be noted that testing on the NS series penetrations has been conducted by the manufacturer and the licensee should obtain a copy of the applicable report.

IELP Response to TER Comment 1

The Type NS penetrations are Type FO1 penetration. The DAEC electric penetration is of the canister Type FO1 (Models NS02, NS03, and NS04) as established by several documents and correspondence, such as:

1. GE Specification 175A9005, Rev 4, dated July 17, 1969 (Bechtel Chron 6899)
2. GE Letter GHP-7-114, dated December 7, 1977, as referenced by QSR 077-A-01, dated October 12, 1980 (Bechtel Chron 10380)
3. GE Letter G-KE-8-51, dated May 9, 1978 (Bechtel Chron 10476)

The applicability of the FOI test report was also confirmed by an NRC Region III inspection as described in Report 50-331/78-12, dated June 13, 1978, Docket 50-331, Inspection at Duane Arnold Site, Palo, Iowa. (Inspection was conducted May 10-12 and 17, 1978, by W.D. Schafer and J. Hughes of NRC Region III.)

TER Comment 2

The materials of construction are not described in the report and no evaluation of the susceptibility of the materials to age related degradation is provided in the referenced report. Although the licensee states that an aging analysis was performed (G080-00), the analysis was not provided to permit independent verification.

IELP Response to TER Comment 2

A radiation and thermal aging evaluation was conducted on the DAEC canister type electric penetrations and was summarized in Bechtel Aging Evaluation Form G080-00, dated July 8, 1982 (Bechtel Chron 8105). This aging evaluation form was revised to include four additional electrical penetrations (see Section II, Action Item 20), to provide a more detailed subcomponent analysis, and to further clarify maintenance/surveillance requirements (see Section III.C). Qualification (for aging) of the low-voltage power penetration cable splices remains under investigation as described in Section II, Action Item 20. Justification for continued operation is reaffirmed for this equipment as also described in Section II.

This analysis evaluated the penetration nonmetallic components (epoxy seal, lead wire insulation, and splice/connector insulation materials) for radiation and thermal aging. The limiting material was found to be the nylon-insulated splices (see Section II, Action Item 20 for intended resolution of this potential aging concern). Also, the surveillance requirements identified on the GE electric penetration SCEW sheets (G080-84, -88, and -90) were concluded to be an acceptable means of monitoring potential thermal aging in the epoxy sealing material.

TER Comment 3

No spray testing was performed; it should be noted that the DOR guidelines do not provide for saturated steam as a substitute for chemical spray.

IELP Response to TER Comment 3

DOR guidelines (Section 5.3, Attachment 4, IE Bulletin 79-01B) state that for equipment type-tested for high temperature, pressure, and steam, qualification for chemical spray (e.g., demineralized water) may be demonstrated by analysis. The results of an analysis documenting resolution of this containment spray concern are provided in the resolution description portion of Section II, Action Item 20.

K. ELECTRIC CABLE AND CONNECTORS; RAYCHEM (TER EQUIPMENT ITEM 108): OKONITE (TER EQUIPMENT ITEM 109): ROCKBESTOS (TER EQUIPMENT ITEMS 111 AND 114): ANACONDA ERICKSON (TER EQUIPMENT ITEM 112): AND VICTOREEN CONNECTOR (TER EQUIPMENT ITEM 115)

TER Comment 1 (TER Equipment Item 108)

The licensee should provide the information on the cable insulation thickness (jacket and conductor insulation) and any other characteristics which demonstrate that the installed cable is the same as the cable in the referenced test (F-C4033-1).

TER Comment 2 (TER Equipment Item(s) 108, 109, 112, and 114)

The licensee has not presented sufficient information to establish equivalence between the cable tested and the installed cable as required by DOR guidelines and/or IEEE Standard 383-74.

IELP Response to TER Comments 1 and 2

TER Equipment Item 108

The table below describes the worst-case cables (i.e., minimum insulation and jacket thickness) for Raychem cables purchased for use at the DAEC (Iowa Electric Purchase Order 7884-E-23) and representative cables tested and qualified in Franklin Institute Report F-C4033-3, dated January 1975 (Bechtel Chron 7774). This shows that Raychem cables used at the DAEC are enveloped by this test report.

DAEC Cable Description

Test Sample Description

- | | |
|--|---|
| <p>1. Conductor: #22 AWG, 19-strand
tinned copper
Dielectric: alkane-imide polymer
plus Rayolin R
Shield: bare copper wire, #34 AWG
having coverage not less than 90%
Jacket: black Flamtrol
Noisefree treatment: anti-microphonic
Outside diameter: 0.242 ± 0.004 in.</p> <p>2. Conductor: #26 AWG, stranded (7/34),
tinned copper
First insulation: alkane-imide
polymer, nominal diameter 0.027 in.
Second insulation: cross-linked
cellular polyolefin, nominal dia-
meter 0.285 in. (± 0.007 in.)
First shield: tinned copper braid,
90% minimum coverage, nominal dia-
meter 0.306 in.
First jacket: flame-retardant,
noncorrosive, cross-linked poly-
olefin, nominal diameter 0.350 in.
Second shield: tinned copper braid,
90% minimum coverage, nominal dia-
meter 0.371 in.
Second jacket: same as first jacket
except nominal diameter 0.437 in.
(0.446 in. maximum)</p> | <p>Raychem adverse service
coaxial cable #22 AWG
conductor: first
insulation layer, 8 mil
wall of alkane-imide
polymer; second insu-
lation layer, 49 mil
wall of Rayolin R[™]
radiation cross-linked
polyolefin; braided
copper shield; Raychem
Flamtrol[™] jacket,
34 mil nominal wall</p> <p>Raychem adverse service
triaxial cable, #26 AWG
conductor: first
insulation layer, 4 mil
wall of alkane-imide
polymer; second
insulation layer,
129 mil wall of Rayfoam
F[™] radiation cross-
linked cellular
polyolefin; braided
copper shield; first
jacket, 22 mil of
Raychem Flamtrol;
braided copper
shield; second
jacket 33 mil of
Raychem Flamtrol</p> |
|--|---|

TER Equipment Item 109

Okonite Letter, J.S. Lasky to J. Hurley, dated June 4, 1980 (Bechtel Chron 1462) states that Qualification Test Report NQRN-1 is applicable to all Okonite cables supplied to the DAEC. Okonite has also indicated in Chron 1462 that although the Okonite insulation used in the test report is very slightly modified from the cables supplied to the DAEC, the modifications are not generic in nature and do not affect the applicability of the test report. In addition, the test cable insulation thickness of 30 mils is less than or equal to the insulation thickness of Okonite cables supplied to the DAEC.

TER Equipment Item 112

The following table lists the worst-case cables (i.e., minimum insulation thickness) of cables listed in Iowa Electric Purchase Orders 51918 and 46332-NG as compared to cables tested in FRC Report F-C4969-1 (Bechtel Chron 7702). The insulation thickness of the tested cables is representative in size to the cables used at the DAEC; therefore, cable qualification is enveloped by Test Report F-C4969-1.

<u>DAEC Cable Description</u>	<u>Test Sample Description</u>
1. Safety-related, Class 1E cable 1/C #14 AWG, seven-strand, copper coated 0.030-inch, FR-EP	600 V ac, FR-EP power and control cable, 1/C, #12 AWG, 7/W, tinned copper conductor, 30-mil insulation thickness
2. Safety-related, Class 1E cable 2/C #16 AWG, seven-strand, coated soft copper 0.025-inch FR-EP insulation, shielded with drain wire, CPE overall, twisted/shielded	600 V ac, instrumentation cable, 2/C, #16 AWG, 7/W, tinned copper conductor, 25-mil flame-resistant, cross-linked EPR jacket insulation (FR-EP), twist, asbestos/mylar tape, tinned copper drain wire, aluminum/mylar tape, 45-mil chlorinated polyethylene jacket (CPE)

TER Equipment Item 114

The following table lists the cables purchased for use at the DAEC (Iowa Electric Purchase Orders 52796 and 46201-NG) and are applicable to Rockbestos Test Reports QR-1804 (Bechtel Chron 7913), QR-1806 (Bechtel Chron 7912), QR-1807 (Bechtel Chron 7911), and FRC Report F-C3798 (Bechtel Chron 10296). The insulation thickness of the cables tested is less than or equal to the insulation thickness of cables used at the DAEC; therefore, the DAEC cable qualification is enveloped by the test reports.

DAEC Cable DescriptionTest Sample Description

- | | |
|--|--|
| 1. Safety-related, Class 1E cable, 3/C #16 AWG, seven-strand, coated soft copper, 0.030-inch FR-EP insulation, shielded with drain wire, CPE jacket overall (see Cable Note), twisted/shielded | From Rockbestos Test Report QR-1804: single-conductor #12 AWG, 600 V, 30-mils of Firewall EPR insulation with 15-mil jacket of Hypalon |
|--|--|

Cable Note: The jacket material provides mechanical protection for cable pulling only and is not a critical component for equipment qualification as long as the test sample and actual DAEC cable are both of representative thickness and representative material characteristics (i.e., mechanical durability).

DAEC Cable DescriptionTest Sample Description

- | | |
|--|---|
| 2. Safety-related, Class 1E cable, 1/C 250 MCM, 37-coated soft copper, 0.045-inch EP insulation, 0.30-inch Hypalon jacket | Single-conductor #12 AWG, 600 V, 30-mils of strand, Firewall EPR insulation with 15-mil jacket of Hypalon (from Rockbestos Test Report QR-1804) |
| 3. Safety-related, Class 1E cable, 3/C #16 AWG, Class B stranding, tinned copper, 30-mil flame-retardant cross linked polyolefin insulation color-coded, aluminum, polyester tape shield with tinned copper drain wire, flame-retardant binder in a 45-mil flame-retardant neoprene jacket, rated 90C, 600 V overall, nominal outside diameter of 0.37 inch. | Single-conductor, #16 AWG, 300 V, 20-mils of flame-retardant, chemically cross-linked polyolefin insulation identified as Rockbestos Firewall III; conductor 7/0.0192-inch coated copper (from Rockbestos Test Report QR-1807) and Single-conductor, #12 AWG, 600 V, 30-mils of flame-retardant, irradiation, cross-linked polyolefin insulation identified as Rockbestos Firewall III; conductor 7/0.0305-inch coated copper (from Rockbestos Test Report QR-1806) |

DAEC Cable Description

Test Sample Description

- | | |
|--|---|
| 4. Safety-related, Class 1E cable, 3/C #8 AWG, seven-strand, tinned copper, 45-mil flame-resistant XLPE insulation, 60-mil flame-resistant neoprene jacket | Firewall III: 7/C, #12 TCC, 600 V control cable, 30-mils of flame-retardant XLPE insulation, 45-mils of flame-retardant neoprene jacket (from Franklin Test Report F-C3798) |
|--|---|

TER Comment 3 (TER Equipment Item 109)

The licensee has not provided the evaluation of aging degradation for the cable that was referenced on the SCEW sheet. Referenced Okonite Test Report NQRN-1 (Bechtel Chron 1462) has extensive aging data if the licensee can provide traceability to the report.

IELP Response to TER Comment 3

Okonite Test Report NQRN-1 documents accelerated aging results on a graph of time versus temperature for Okonite EP insulation (which is the same type of insulation on the Okonite cables at the DAEC) on Chart 1. Bechtel's Aging Evaluation Form 0004-02 summarizes results of an evaluation of the applicability of Okonite Test Report NQRN-1 to DAEC existing cables. The qualified life of the cables is concluded to be 40 years for maximum continuous temperatures up to 150F. Note: This aging evaluation form was revised on September 9, 1983, for reasons described in Section III.C.

Background for TER Comment 4

Reference 4 identified FRC Test Report F-C4969-1 (Bechtel Chron 7702) as a reference for environmental qualification of this equipment item.

TER Comment 4 (TER Equipment Item 112)

The licensee has not provided the analysis that establishes the equivalence between the thermal preaging conducted in the test program and a 40-year qualified life.

IELP Response to TER Comment 4

FRC Test Report F-C4969-1, Attachment AT-1 documents accelerated aging results on a graph time versus temperature for FR-EP-insulated cable (which is the same type of insulation used on Anaconda-Erickson cable at the

DAEC) on Page 3. Bechtel's Aging Evaluation Form A385-01 summarized results of an evaluation of the applicability of FRC Test Report F-C49659-1 to DAEC existing cables. The qualified life of the cables is concluded to be 40 years for maximum continuous temperatures up to 180F.

Note: This aging evaluation form was revised on September 9, 1983, for reasons described in Section III.C.

TER Comment 5 (TER Equipment Item 111)

The licensee needs to determine from the manufacturer whether the cable installed is suitable for the application. If used in the General Atomics Corporation (GAC) high-range monitor, the cable is not qualified.

IELP Response to TER Comment 5

Rockbestos coaxial cable evaluated on SCEW 338 of Reference 4 was mistakenly identified as having a solid dielectric. This cable was procured by Iowa Electric Purchase Order 57028 and contains a cellular dielectric; therefore, it is qualified by Rockbestos Test Report 2806, Part 2 (Bechtel Chron 7955).

Equipment Item 113 (Rockbestos coaxial cable evaluated on SCEW 335 of Reference 4) was procured in accordance with Iowa Electric Purchase Order 46201 and contains the solid dielectric of concern and is therefore not suitable for high-temperature application (see Note 1 of SCEW 335 of Reference 4). This concern is a known problem resulting in restricted use of this cable at the DAEC. The concern associated with this cable was disseminated via NSAC/INPO Significant Event Report (180), dated February 8, 1982 (Bechtel Chron 6462). Also, GAC high-range radiation monitoring equipment is not used at the DAEC.

TER Comment 6 (TER Equipment Item 115)

The licensee should identify the installed method of connection and justify the integrity of the connection through qualification testing/analysis or document similarity between installed interface and Victoreen Drawing 91007.

IELP Response to TER Comment 6

Note: Drawing 91007 is assumed to be Drawing 910077. The connection procedure (Victoreen Drawing 910077) was used in the installation instructions for these cable assemblies as documented in Iowa Electric Field Change Request 909-1,

Revision 0 (Victoreen Drawing 910077 is Item 5.1 of this FCR package) and therefore, Qualification Report 950.301 [Vendor Print 11186-211-37439-2(6)-1] is applicable to the DAEC-installed equipment.

- L. REACTOR SAFETY RELIEF VALVE POSITION INDICATION [TER EQUIPMENT ITEM 60 (PRESSURE CONTROLS MODEL A171N) PLANT ID PS-4400 THROUGH PS-4407, ALL A,B,C]

Background for TER Comment 1

The qualification test [Report 58572 (Bechtel Chron 7314), dated November 12, 1980] conducted by Wyle Laboratories states that the test specimens were installed in a suitable test chamber and that spray deflection plates were installed over the specimens to preclude direct-spray impingement on the specimens.

TER Comment 1

The direct effects of spray and in-leakage have not been considered by the test or licensee.

IELP Response to TER Comment 1

A walkdown was performed to confirm that the DAEC pressure switches are not subjected to the direct effects of containment spray. See Section II, Action Item 38 resolution for more detail.

Background for TER Comment 2

Reference 4 identified the pressure controls Model A171N pressure switch to be qualified for 40 years based on Bechtel Aging Evaluation Form P381-01, dated June 18, 1982 (Chron 8114). This aging evaluation form referenced accelerated aging test data from Qualification Test Report 58572, dated November 12, 1980 (Chron 4413).

TER Comment 2

A deficiency exists with respect to a suitable basis and justification for concluding that 257F for 100 hours establishes a 40-year qualified life. Bechtel Chron 8114 was not submitted for review and evaluation.

IELP Response to TER Comment 2

Bechtel Aging Evaluation Form P381-01 identifies the limiting subcomponent materials to be the kapton-insulated lead wires and the glass-filled phenolic separators. When

using Pressure Controls test report aging test data, an activation energy of 1.57 eV and a maximum continuous normal temperature of 165F, qualified life of at least 40 years is concluded. The Pressure Controls test report does not specifically address aging effects in the phenolic material; therefore, thermal aging information from Plastics, Edition 6, 1983, was used to confirm a qualified life of at least 40 years.

Note: This aging evaluation form was revised on September 9, 1983, for reasons described in Section III.C.

M. CONTAINMENT ISOLATION VALVE POSITION

TER Equipment			
<u>Item</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Plant Identification</u>
74	NAMCO	SAI31	*ZS-4310
75	NAMCO	SAI31	*ZS-4309
78	NAMCO	SAI131	ZS-4640
82	Microswitch	OPD-AR	ZS-4304, ZS-4305, *ZS-4301
83	Microswitch	OPD-AR	*ZS-4303
84	Microswitch	OPD-AR	ZS-4306, ZS-4307, ZS-4308
85	Microswitch	DTF22RNRH	ZS-3704; ZS-3705; ZS-3728; ZS-3729; ZS-5703A,B; ZS-5704A,B; ZS-5718A,B; ZS-5719A,B
86	Microswitch	DTF22RNRH	ZS-4311, ZS-4312, ZS-4313

The above instruments monitor the position of containment isolation valves. See Section II, Action Item 32 for description of environmental qualification requirements and status, method of intended resolution and schedule, and justification for continued operation.

*Position switches ZS-4310, ZS-4309, ZS-4301, and ZS-4303 have been determined to be located in a mild environment; therefore, environmental qualification is not required.

N. DRYWELL TEMPERATURE

TER Equipment			
<u>Item</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Plant Identification</u>
95	Leeds & Northrup	89204050005	TE-4328L
96	Leeds & Northrup	892040400321	TE-4386E,F,G,H,J,K,L,M
97	Leeds & Northrup	819710S	TE-4328E,F,G,H,J,K,M

These instruments monitor drywell temperature. See Section II, Action Item 33 for a description of environmental qualification requirements and status, method of intended resolution and schedule, and justification for continued operation.

NOTE: As a result of the evaluation described in Section II, Action Item 33 resolution, only the TER equipment Item 96 temperature elements are required to perform post-accident drywell temperature monitoring.

O. EQUIPMENT NO LONGER IDENTIFIED AS ACCIDENT MONITORING INSTRUMENTATION

TER Equipment Item	Manufacturer	Model	Plant Identification
52	GE	555111BCAA3ABA	FT-3707, FT-3708
53	GE	551032GKZZ2	PT-2306, PT-2207
54	GE	551032EKZZ2	PT-2126, PT-2106
56	Delaval	31924	LS-3701, LS-3721
57	Delaval	XM33353	LE-3701, LE-3721
67	GE	237X731G001	RE-4448A,B,C,D
73	NAMCo	SAI131	ZS-2211, ZS-2212
79	NAMCo	SAI131	ZS-2234, ZS-2235
80	NAMCo	SAI131	ZS-2435, ZS-2436
81	Microswitch	OPD-AR	ZS-7602A,B; ZS-5825A,B
92	NECI	N145C3044	TE-3724
93	NECI	136B3184	TE-4403, TE-4404
99	Leeds & Northrup	819710S	TE-4328A,B,C,D
100	Leeds & Northrup	892040400321	TE-4386A,B,C,D
101	GE	PN133D9679	TE-4400, TE-4401, TE-4402, TE-4405, TE-4406, TE-4407
120	ITT-Barton	368	PDT-4623

The above instruments included in System 36 (Safety Display Instruments) in previous NRC submittals (References 2, 3, and 4) have been determined to not provide primary accident monitoring information. This determination is based on the approach described in Section IV. For these instruments, environmental qualification is not required and justification for continued operation is not provided.

VIII. TER CATEGORY IV EQUIPMENT ITEMS (DOCUMENTATION NOT MADE AVAILABLE)

The TER Category IV classification was based on environmental qualification documents not made available for review by FRC. In each of these cases the documents were not previously requested.

FRC comments on DAEC equipment in Category IV have been reviewed and addressed below by providing a technical summary (responding to the FRC comments) of the qualification documents.

A. AUTOMATIC VALVE COMPANY (AVCo)

Model C5450-5 Solenoid Valves (TER Equipment Item 24)

1. BACKGROUND (TER COMMENT 1)

Environmental Qualification of this equipment is based on BWR Equipment Qualification Summary QSR-052-A-01, dated September 19, 1980 (Bechtel Chron 7500) and its attachment report, Environmental Testing of MSS/RV Air Control Valves 126-62, dated January 15, 1975; ADS Solenoid Valves (AVCo Model C5450-5) Qualification by Analysis by Bechtel Power Corporation, dated March 30, 1982 (Bechtel Chron 6800); and Aging Evaluation Form A613-01, dated July 8, 1982 (Bechtel Chron 8103).

2. TER COMMENT 1

The licensee has referenced a Bechtel Power Corporation analysis which was not made available for review.

3. IELP TECHNICAL SUMMARY RESPONSE TO TER COMMENT 1

The Bechtel Power Corporation analysis was performed in accordance with IEEE Standard 323-1974 and is summarized as follows. The analysis was performed to address the effects of chemical spray.

The AVCo solenoid valve, Model C-5450-5 will be able to withstand the demineralized water spray environmental requirement based on its inherent watertight NEMA 4 specification design, construction, and existing qualification test data. This NEMA 4 application uses Viton seals that have been successfully qualification tested in other types of solenoid valves.

4. BACKGROUND (TER COMMENT 2)

The SER response, dated September 8, 1981, stated that solenoid valves SV-4400, SV-4402, SV-4405, and SV-4406 are qualified for up to 14 years of normal operation plus an accident radiation dose.

The July 15, 1982, semiannual environmental qualification report stated that these solenoid valves are qualified for a 40-year normal operation plus an accident radiation dose based on replacement of Viton seals after 20 years.

5. TER COMMENT 2

The licensee should resolve conflicting statements concerning the qualified life of these valves.

6. IELP TECHNICAL SUMMARY RESPONSE TO TER COMMENT 2

These AVCo solenoid valves have been qualified by test for a total integrated radiation dose of 3.0×10^7 rads. The 14-year qualified life was based on a 30-day accident dose of 2.3×10^7 rads and a 14-year normal operating dose of 7.0×10^6 rads (the 40-year normal operating dose is 2.0×10^7 rads). These radiation values are based on DAEC UFSAR Section 3.11.

An aging review program was completed for the July 15, 1982, semiannual environmental qualification report. A calculational refinement of the 30-day accident dose resulted in a decrease in the radiation dose from 2.3×10^7 to 6.2×10^6 rads. The 40-year qualified life of these valves documented by the Bechtel analysis (Bechtel Chron 6800) and Aging Evaluation Form A613-01 is based on the revised 30-day accident dose of 6.2×10^6 rads and a 40-year normal dose of 2.0×10^7 rads, which gives a total integrated radiation dose of 2.62×10^7 rads (less than the 3.0×10^7 rad qualification value).

Viton seals (in ASCo solenoid valves) have been determined to be susceptible to failure from radiation when exposed to a dose in the range of 2.3×10^7 to 2.0×10^8 rads. Although the AVCo qualification report qualified Viton seals for at least 3.0×10^7 , the Viton seals in the DAEC AVCo models will be replaced after 20 years as an additional degree of conservatism.

Replacement of drywell equipment Viton seals after 20 years will limit the total integrated radiation dose (20-year normal plus 30-day accident dose) to less than 2.0×10^7 rads.

Aging Evaluation Form A613-01 was revised on August 10, 1983, to reflect a higher than previously assumed ambient temperature (165F instead of 150F). The higher temperature was determined to not affect the equipment qualified life as described above.

B. ASCO MODEL NP8323A36V SOLENOID VALVES (TER EQUIPMENT ITEMS 47 and 48)

1. BACKGROUND

These solenoid valves are environmentally qualified by ASCo Test Report AQR-67368 Revision 0 dated March 2, 1982 (Bechtel Chron 7411), and AEF A499-00V, dated July 8, 1982 (Bechtel Chron 8102).

2. TER COMMENT

The licensee did not provide ASCo Test Report AQR-67368 or AEF A499-00V for review.

3. IELP TECHNICAL SUMMARY RESPONSE

ASCo Test Report AQR-67368 tested several families of nuclear class (NP series) solenoid valves, including the family containing Model NP8323A36V. Testing of these valves was conducted in accordance with ASCo Qualification Specification AQS-21680, Revision C, which was written to comply with the requirements of the following documents.

- a. IEEE Standard 323-1974
- b. IEEE Standard 344-1975
- c. IEEE Standard 382-1980
- d. IEEE Standard 627-1980

These valves were thermally aged at 250F for 18-1/4 days (36-1/2 days for the solenoid coils), wear-aged to 20,100 cycles, radiation-aged to 23 megarads, vibration-aged, and seismically qualified (OBE).

Design basis event (DBE) testing was performed in three phases: seismic DBE simulation, radiation DBE simulation to 182 megarads, and environmental DBE simulation for 30 days at a maximum temperature and pressure of 448F and 68 psig. Chemical sprays consisting of demineralized water and borated water spray in solution with sodium thiosulfate buffered with sodium hydroxide were used. Baseline testing was performed at various stages throughout the test program.

The valve tested for the valve family, including Model NP8323A36V, successfully passed all tests with the exception of the minimum voltage baseline test following the DBE radiation simulation. It was found that the Viton seals used could slightly adhere to the brass seating surfaces at radiation doses exceeding 23 Mrad but less than 200 Mrads.

Bechtel Aging Evaluation Form A499-00V references ASCo Test Report AQR-67368, Revision 0, dated March 2, 1982, as documenting that Viton seals are the limiting component. Aging Evaluation Form A499-00V concludes a conservative qualified life of 20 years for Viton elastomers used in the drywell. Replacement of drywell (and steam tunnel) equipment Viton seals after 20 years will limit the total radiation dose (20 years normal plus 30-day accident dose) to less than 20 Mrads. Therefore, these valves are qualified for 40 years based on replacement of Viton seals after 20 years.

C. STATIC-O-RING MODELS 5NAA3 AND 12NAA5 PRESSURE SWITCHES, TER EQUIPMENT ITEMS 61 AND 62

1. BACKGROUND

These switches are located in an area of the plant which is harsh for radiation only. Reference 4 indicated these switches to be qualified by EDS Analysis (Problem File 0460-067-003), dated March 19, 1982 (Bechtel Chron 6863) and by Bechtel Aging Evaluation Form S382-00, dated July 8, 1982 (Bechtel Chron 8118).

2. TER COMMENT

The licensee has not provided the above references for review; therefore, this equipment item has been placed in Category IV.

3. IELP TECHNICAL SUMMARY RESPONSE

EDS Analysis (Problem File 0460-067-003) summarizes actual test data from a temperature/pressure/humidity test performed on a Model 12N-AA4-TTX10 pressure switch and radiation and thermal aging data for the subcomponent materials used in these switches.

The EDS analysis references Viking Laboratories Test Letter 30203-2, dated November 20, 1973, which documents acceptable operability and repeatability of Static O-Ring Model 12N-AA4-TTX10 under the following simultaneous

environmental conditions: 212F, 7.0 inches water pressure, and 100% relative humidity. This test was repeated for high, low, and midrange pressure settings. Visual inspection of this switch at the completion of the test revealed no major damage.

Bechtel Aging Evaluation Form S382-00 used data from the EDS analysis to establish a qualified life for the switches. Arrhenius calculations were performed for each subcomponent subject to aging degradation. The EDS data showed that the only subcomponent materials with a qualified life of under 40 years at 104F normal temperature is the PVC lead wire with a qualified life of 16 years and the primary diaphragm and O-ring, both Buna-N, with a qualified life of 30 years. The switch materials were found to be qualified for a minimum of 1.0×10^6 rads.

The qualified life of the PVC-insulated lead wires was reevaluated in Revision 1 of Bechtel Aging Evaluation Form S382-00 using PVC aging data from other sources. These other sources included NUREG/CR-2156, Radiation-Thermal Degradation of Polyethylene and Polyvinyl Chloride: Mechanism of Synergism and Dose Rate Effects, dated June 1981, EPRI Report NP-1558, Project 890-1, dated September 1980, and the Industrial Motor User's Handbook of Insulation for Rewinds, by Rejda and Neville, 1977. The dose rate synergistic effect concern associated with PVC (see NUREG/CR-2156) was determined to be not applicable for this DAEC application because of the low 40-year normal integrated radiation dose (i.e., less than 10^4 rads). The qualified life of PVC insulation under conditions where mechanical strength and flexibility (during accident conditions) are not critical to the equipment's safety function, and where the post-accident dose is less than 8×10^6 rads is conservatively determined to be 40 years.

These pressure switches are qualified for 40 years based on replacement of the diaphragms and O-rings after 30 years.

D. BARTON MODEL 288A D/P INDICATING SWITCH (TER EQUIPMENT ITEM 65)

1. BACKGROUND

These switches are located in an area of the plant which is harsh for radiation only. These switches are qualified by Bechtel Aging Evaluation Form I204-06, dated July 8, 1982 (Bechtel Chron 8107).

2. TER COMMENTS

Licensee has referenced Chron 8107 and stated the qualified life of the device is 16 years and that surveillance will monitor the device for degradation at 18-month intervals; however, Chron 8107 has not been provided for NRC review.

3. IELP TECHNICAL SUMMARY RESPONSE

The aging evaluation provided by Bechtel Chron 8107 is based on thermal aging data from EDS analysis [Problem File 0460-067-002 (Bechtel Chron 6863)] and on radiation aging data from ITT/Barton Qualification Report R3-288A-1 (Bechtel Chron 7510).

The EDS analysis lists the service life (based on Arrhenius methodology) of age-susceptible materials used in switch Model 288A. This list shows PVC insulation, with a service life of 16 years to be the limiting material.

The EDS analysis does not provide thermal aging data for the switch's hydrocarbon oil fill fluid. Because thermal aging data are not available, Aging Evaluation Form I204-06 identifies a surveillance requirement to monitor for signs of oil degradation. The performance of the device will be monitored once every refueling cycle by comparing current instrument calibration data to previous calibration; if calibration or setpoint activation exceeds $\pm 1\text{--}1\frac{1}{2}\%$ full scale in the same direction for three consecutive checks or if the hysteresis (deadband tolerance) exceeds 5% of full scale, the switch will be replaced.

Aging Evaluation Form I204-06 was revised to reflect a change in qualified life of PVC insulation from 16 to 40 years (see Section VII.C.3 for details).

ITT/Barton Report R3-288A-1 provides radiation test data on Model 288A switches and for Model 224 hydrocarbon oil fill fluid. The data shows the subject device is qualified for radiation levels up to 3×10^6 rads. This qualification value is in excess of the DAEC's requirement of 2.9×10^5 rads for this application.

E. LOUIS-ALLIS MODEL COG-4B TYPE 19236S-3E371 FAN MOTORS (TER EQUIPMENT ITEM 90)

1. BACKGROUND

These motors are located in an area of the plant which is harsh for radiation only. These motors are qualified by Aging Evaluation Form L280-01, Revision 1, dated August 11, 1983 (Bechtel Chron 12963).

2. TER COMMENT

Aging Evaluation Form L280-01 was not submitted for review.

3. IELP TECHNICAL SUMMARY RESPONSE

Aging Evaluation Form L280-01 is an analysis of radiation and aging degradation for DAEC Fan Motors 1V-EF-15A and 1V-EF-15B (manufactured by Louis Allis).

An analysis of radiation degradation for the fan motor subcomponents shows that the most susceptible subcomponent material (polyester/nylon overcoat) is acceptable for use at exposures up to at least 1.0×10^7 rads.

A thermal aging degradation analysis of these motors based on the similarity to other Class B motors (and using the definition of Class B insulation from IEEE Standard 117-1974) and thermal degradation using Arrhenius methods shows the qualified life for these motors is at least 40 years.

F. GENERAL ELECTRIC MOTORS MODELS 5K6336XC213A and 5K6336XC229A (TER EQUIPMENT ITEMS 91 AND 119)

1. BACKGROUND

These DAEC motors are located in an area of the plant where qualification for radiation (5.9×10^6 rads) is required. Model 5K6336XC229A is qualified by Aging Evaluation Form G080-46, dated June 18, 1982 (Bechtel Chron 8105). Model 5K6336XC213A is qualified by Aging Evaluation Form G080-45, dated June 18, 1982 (Bechtel Chron 8105). Both Aging Evaluation Form G080-45 and Aging Evaluation Form G080-46 are based on GE Qualification Report NSE-76-1281, dated February 8, 1982 (Bechtel Chron 6599).

2. TER COMMENTS

The licensee has not provided Aging Evaluation Form G080-45, Aging Evaluation Form G080-46 or GE Qualification Report NSE-76-1281 for review.

3. IELP TECHNICAL SUMMARY RESPONSE

Bechtel Aging Evaluation Form G080-46 provides a summary of the acceptability of the aging evaluation results provided in GE Qualification Report NSE-76-1281. GE Report NSE-76-1281 demonstrates qualification of the DAEC motors by similarity analysis to GE test motors, Models 5K6339XC166A and 5K6339XC94A. The DAEC motors are

basically the same construction as the test motors except for size. Size differences between motors will not affect the radiation and thermal aging evaluation results because the insulation system (Class B) used in the motors is the same. The report also:

- a. Compared DAEC motors to GE formettes and motors tested to a postulated life, radiation, seismic, steam line break, DBA and post-DBA
- b. Reviewed operational experience on GE motors for Class 1E application
- c. Performed a failure analysis to show qualified life based on failure data over 15,000 motors

The report shows that the motor materials affected by radiation used can withstand dosages of 4.6×10^7 rads which is in excess of DAEC requirements.

G. GULTON INDUSTRIES MODEL TCA-0646 TEMPERATURE ELEMENT
(TER EQUIPMENT ITEM 98)

1. BACKGROUND

These temperature elements are located near the standby gas treatment filters and are harsh for radiation only. Environmental qualification for this equipment is documented by Bechtel Aging Evaluation Form G315-01, dated June 29, 1982 (Bechtel Chron 8106).

2. TER COMMENT

The licensee has not submitted Aging Evaluation Form G315-01 for review.

3. IELP TECHNICAL SUMMARY RESPONSE

Bechtel Aging Evaluation Form G315-01 states that these temperature elements contain no subcomponents which are susceptible to radiation or thermal aging degradation. The only nonmetallic subcomponent material is compressed magnesium oxide which, because of its ceramic properties, is subject neither to thermal aging degradation nor radiation-induced damage.

Bechtel Aging Evaluation Form G315-01 was revised on August 11, 1983, to reflect a higher SGTS filter post-LOCA dose of 3.5×10^8 rads. (The calculation providing the original required dose of 1.6×10^8 rads was found to be

in error and nonconservative for equipment within 1 foot of the filter.) The revised aging evaluation form also concludes a qualified dose of at least 5.0×10^{10} rads based on the ceramic (nonorganic) subcomponents of the temperature elements.

H. KERITE 5KV CABLE MODEL HT WITH NS JACKET (TER EQUIPMENT ITEM 107)

1. BACKGROUND

These cables are environmentally qualified by LOCA Qualification Test of Kerite HTK/HTNS Nonshielded Power Cables, dated February 17, 1981 (Bechtel Chron 7591), and Bechtel Aging Evaluation Form K080-01, dated June 18, 1982 (Bechtel Chron 8108).

2. TER COMMENT

The licensee did not provide the test report for review.

3. IELP TECHNICAL SUMMARY RESPONSE

This is a test report specific to the DAEC which tested a single conductor, #6 AWG, 5 kV nonshielded power cable, 125 mils HTK (N-98) insulation with 80 mils of HTNS (HI-70) jacketing. The test was performed in accordance with IEEE Standard 383-1974 and IEEE Standard 323-1974. This cable was preaged for 100 hours at 150C, irradiated to 200 Mrads, installed in a pressure vessel and subjected to a 100 day steam/chemical spray environment while continuously energized at 2,700 V ac.

This report concludes that Kerite 5 kV, HTK, HTNS jacketed cable can operate while being exposed to harsh environment conditions. Test data can be found in Isomedix Report I-R 975-01, dated October 1975.

IX. TER CATEGORY II.C EQUIPMENT ITEMS (EQUIPMENT SATISFIES ALL REQUIREMENTS EXCEPT QUALIFIED LIFE OR REPLACEMENT SCHEDULE JUSTIFIED)

Classification of equipment in this category was the result of FRC's determination that the equipment satisfies all requirements except qualified life or replacement schedule.

The comments/concern for each of the 16 TER Category II.C equipment items were reviewed as described below and in the following subsections (where necessary, a background statement or paragraph is provided to support understanding of the TER comments).

To simplify this response, Category II.C equipment items have been arranged in generic groups similar to the approach taken in Sections VII and VIII.

A. LIMITORQUE MOTOR OPERATORS

TER Comment 1 (TER Equipment Items 3, 4, 13, 17, and 123)

The licensee has not provided documentation from the manufacturer which states that the cited test reports are applicable to these equipment items.

IELP Response to TER Comment 1

Equipment Items 3 and 4 address Limitorque motor-operated valve (MOV) actuators equipped with dc motors using Class B insulation. Equipment Items 13, 17, and 123 address Limitorque MOV actuators equipped with ac motors using Class B insulation.

See Section VII.A, IELP Response to TER Comment 1, for the remainder of IELP's response to this TER comment.

TER Comment 2 (TER Equipment Items 3, 4, 13, 17, and 123)

The licensee has not provided for review the documentation or the technical basis to support the claim of a 40-year qualified life estimate.

IELP Response to TER Comment 2

See Section VII.A, IELP Response to TER Comment 2, for IELP's response to this TER comment.

B. ASCO MODELS 2068323RV, NP8321A5E, NP8320A173E, AND
NP831665E SOLENOID VALVES (TER EQUIPMENT ITEMS 26, 27,
30, 35, 37, 38, AND 39)

Background

Reference 4 identified the above equipment items to be environmentally qualified by ASCo Test Report AQS-21678/TR, Revision A, dated July 1979 (Bechtel Chron 7318).

The more recent ASCo Test Report AQS-67368, Revision 0, dated March 2, 1983 (Bechtel Chron 7411) has been determined to also be applicable to these equipment items.

TER Comment 1

It was concluded that the solenoid enclosure interface degraded to the point where spray solution entered the enclosure, degrading the coil insulation. It is recommended that the licensee provide a suitable seal for the cable entry to the solenoid enclosure.

IELP Response to TER Comment 1

The test report states that the solenoid enclosures were wired through Liquitite Type LT flexible electrical conduit manufactured by Electrical-Flex Company. This conduit is rated for 120F and during the 30-day LOCA test, the plastic liquidtight covering broke down allowing spray solution to enter the solenoid enclosure.

The LOCA simulation test raised the temperature and pressure to 346F/110 psig and maintained conditions above 220F/10 psig for 30 days. However, during and after the test, the solenoid valve was found to operate satisfactorily.

TER Comment 2

The licensee's 20-year replacement interval for ethylene propylene elastomers lacks technical justification. The licensee should present an analysis to support a 20-year qualified life estimate for this equipment.

IELP Response to TER Comment 2

ASCo Qualification Report AQR-67368, Appendix C concluded a 40-year qualified life for ethylene propylene terpolymer (EPDM) when used in the ASCo valve components at 104F continuous ambient temperature. As noted in the report,

ASCo conservatively chose a valve of 0.94 eV as the activation energy and artificially aged the solenoid valves for 18-1/4 days at 250F ambient temperature. Figure 1 of the ASCo qualification report provides a graph of the maximum service periods with respect to ambient temperatures. The 0.94 eV activation energy is conservative because it corresponds to an aging rate associated with retaining 500% elongation retention capability. The activation energy associated with 200% elongation retention is 1.1 eV and would also be conservative.

Bechtel Aging Evaluation Form A499-00E concluded a replacement interval of 20 years for the EPDM elastomer to account for potential (NUREG/CR-2157) dose rate synergistic effects occurring in an oxygen environment. It was concluded that synergistic contributions to aging degradation over a 20-year interval at maximum continuous ambient temperature of 104F would not affect the elastomer's sealing capability.

C. BARTON MODEL 764 LEVEL/PRESSURE TRANSMITTER (TER EQUIPMENT ITEMS 58 AND 59)

Background

The qualified life of 24 years for ITT-Barton Model 764 was established at the time of development of the Reference 3 semiannual report by Bechtel Aging Evaluation Form I204-02 and ITT-Barton Report R3-764-3. Since then, ITT Report R3-764-3 has been superseded with ITT Report R3-764-9 and Bechtel Aging Evaluation Form I204-02 has also been revised.

TER Comment

The licensee has not submitted for review Bechtel Aging Evaluation Form I204-02 (7-8-82), Bechtel Chron 8107.

IELP Response

This equipment performs an accident monitoring instrument function. Because of the location in the torus room and post-LOCA safety display function, only radiation dose and aging are required to be considered for environmental qualification.

Environmental qualification of Barton Model 764 is presently established based on a review of Barton Test Report R3-764-9, dated October 1982 (Vendor Print 11186-212-J-37351-22-1) entitled, ITT-Barton Model 764 Differential Pressure Electronic Transmitter Qualification

Test Report. This report demonstrates the adequacy of the Model 764 to perform its specified functions before, during, and after the postulated DAEC service conditions. The tests performed in accordance with IEEE Standard 323-1974 and NUREG 0588 requirements were performed in the following sequence.

1. Accelerated aging (1,830 hours at 125C)
2. Radiation exposure (200 Mrads total integrated dose)
3. Seismic simulation (OBE and SSE levels of 9.0 g and 12.5, respectively)
4. DBA simulation (LOCA and HELB)

Qualified life of the Model 764 transmitter is based on results obtained by applying the Arrhenius model to accelerated aging test parameters. The Arrhenius model requires that the activation energies of the Model 764 transmitter materials be identified and an overall transmitter activation energy be assigned. The activation energies of the materials range from 0.78 eV. The transmitter with the exception of the transmitter's O-rings (EPDM) were subsequently subjected to accelerated aging for 1,830 hours. The O-rings were deemed incapable of withstanding 1,830 hours and were replaced 1,555 hours into the test. Therefore, the O-rings received only 275 hours of accelerated aging. The test's accelerated aging program parameters are summarized below.

Base Parameters

Transmitter test time (except for O-rings), hours	1,830
O-ring test time, hours	275
Test temperature, °C	125 (257F)
Limiting transmitter activation energy (excluding O-ring), eV	0.78
O-ring activation energy, eV	0.95

Applying these parameters to the Arrhenius model, Bechtel Aging Evaluation Form I204-02 establishes that the qualified life of the Model 764 transmitter, including O-rings, at the maximum normal service temperature of 104F is at least 40 years.

To address potential dose rate synergistic effects of ethylene propylene resulting from their torus room location, Aging Evaluation Form I204-02 was revised to require replacement of the ethylene propylene O-rings every 20 years.

Therefore, the above evaluation in conjunction with the qualification test results of the Model 764 transmitter as documented in Barton Report R3-764-9 established the transmitters qualification for DAEC application.

D. BOSTON INSULATED WIRE MODEL RG6A/U AND 59B/U (TER EQUIPMENT ITEM 110)

Background

Reference 4 identified Boston Insulated Wire (BIW) Qualification Test B913 for cable Types RG-11/U and 59B/U (Bechtel Chron 7640) as a reference for environmental qualification of BIW Type RG-6A/U and 59B/U.

TER Comment

The licensee has not provided an analysis that establishes the equivalency between the accelerated aging described in the test report and the 40-year qualified life identified on the SCEW sheet.

IELP Response

BIW Test Report B913 documents results of thermal aging on equivalent cables on a graph of time versus temperature (Page 12). The criterion for end-of-life of the cables was assumed to be 40% retention of elongation capability which is conservative for electrical supply cable applications. BIW Test Report B913 tested cable Types RG-59B/U and RG-11/U. DAEC cables are RG-59B/U and RG-6A/U. The DAEC cables are equivalent to the cables tested because the three types (RG-59B/U, RG-11/U, and RG-6A/U) all contain BIW fluoropolymer insulation. Aging Evaluation Form B365-01 confirms and concludes a 40-year qualified life for continuous operating temperatures up to 180F.

E. ROCKBESTOS CABLE TYPES RSS-6-104 AND -109 CELLULAR DIELECTRIC (TER EQUIPMENT ITEM 113)

Background

The previous NRC submittal (Reference 4) identified Rockbestos Qualification Test Report 2806 (Bechtel Chron 7955) for cable Types RSS-6-104 and -109 as a reference for environmental qualification.

TER Comment

The licensee has not provided the analysis of aging/qualified life.

IELP Response

Rockbestos Test Report 2806 documents results of thermal aging for equivalent cables on a graph of time versus temperature (Appendix I, Page 13). The criterion for end-of-life of the cables was assumed to have 60% retention of elongation capability which is conservative for electric supply cable applications. Bechtel Aging Evaluation Form R352-02 confirms the applicability of the Rockbestos Test Report 2806 to DAEC existing cables and concludes a qualified life of 40 years for continuous temperatures up to 180F.

X. DESCRIPTION OF METHODOLOGY USED TO ADDRESS
NONSAFETY-RELATED ELECTRIC EQUIPMENT FAILURES

A. INTRODUCTION

1. 10 CFR 50.49 includes in its scope nonsafety-related electric equipment whose failure under postulated harsh environment conditions could prevent satisfactory accomplishment of a safety function. The possibility of failure of nonsafety-related equipment in a manner detrimental to safety was evaluated previously by a combination of the following methods.
 - a. Review for system-specific failure effects undertaken during development of the DAEC response to NRC IE Bulletin 79-01B (and subsequent environmental qualification related submittals)
 - b. Review of plant design criteria which otherwise prevents (or limits) undesirable nonsafety-related equipment failure effects

No distinction between safety-related and nonsafety-related equipment was made during development of the DAEC response to NRC IE Bulletin 79-01B.

The methodology of review for system-specific failure effects is described in Section B, the relevant plant design criteria are described in Section C, and the results of including or excluding equipment from environmental qualification requirements based on Items a and b above are summarized in Section D.

B. REVIEW AND DEVELOPMENT OF THE LIST OF EQUIPMENT
(SYSTEM COMPONENTS) REQUIRING ENVIRONMENTAL
QUALIFICATION

The review conducted to identify equipment requiring environmental qualification was not limited to safety-related system components. Components required to operate to mitigate the consequences of a LOCA or HELB as defined in NRC IE Bulletin 79-01B or whose potential failure would affect plant safety were identified for review using the following methodology.

1. Equipment essential to safety functions were determined based on Section 3 of the DOR guidelines. These functions are as follows.

- a. Achieve reactor cold shutdown
 - b. Achieve containment isolation
 - c. Provide reactor core cooling
 - d. Provide containment heat removal
 - e. Prevent the release of radioactive material in excess of the guidelines of 10 CFR 100
2. Plant systems were reviewed to identify those essential for (or potential for a failure affecting) the safety functions presented in Section 2.1.
 3. Piping and Instrumentation Diagrams for each of the systems identified in Section B.2 were reviewed to identify system components essential to the performance of the system's safety function or whose failure would affect performance of the system's safety function and are required to function to mitigate the consequences of a LOCA or HELB as defined in NRC IE Bulletin 79-01B.
 4. The entire instrument loop associated with each instrument identified in Section B.3 was reviewed to identify other components whose function was essential or whose failure could adversely affect operation of the instrument loop.
 5. The resultant component list was then coordinated with the NSSS vendor (General Electric) for completeness.
 6. The environmental qualification equipment list submitted with the original DAEC response, dated October 31, 1980, to NRC IE Bulletin 79-01B has been revised and updated on a continuing basis to reflect plant design changes and to incorporate accident monitoring instruments.

C. RELEVANT DAEC PLANT DESIGN CRITERIA

Plant design criteria preventing or limiting failure effects in nonsafety-related electric equipment are summarized below.

1. The DAEC plant design complies with the intent of IEEE Standard 279-1971 as described in UFSAR Sections 6.5.3.3, 7.2.1.2.2, 7.2.1.2.3, 7.2.1.2.4, and 7.3.1.2.2.2. For example, reactor protection system inputs to annunciators, recorders, and the computer are arranged so no malfunction of the annunciating,

recording, or computing equipment can functionally disable the RPS. Signals directly from the RPS sensors are not used as inputs to annunciating or data logging equipment. Relay contact isolation is provided between the primary signal and the information output.

2. If a LOCA initiation signal occurs, nonessential electric loads are deenergized or transferred to the startup transformer (offsite power supply system). Therefore, failure of nonsafety-related electric equipment is prevented from affecting safety-related electric equipment.
3. Coordinated electrical fault protection (in the form of protective relays, circuit breakers, and fuses) is included in the plant design for electrical power distribution circuits. Therefore, harsh environment induced failures producing high current faults in nonsafety-related equipment will be prevented from affecting other electric loads.
4. Although not required (because of the above described plant design criteria) to address the 10 CFR 50.49 Paragraph b(2) nonsafety-related equipment failure concern, an additional level of confidence is provided by procurement specification requirements on cable used in both safety-related and nonsafety-related applications. In general (except for lighting cables), Bechtel-supplied and Iowa Electric-procured electric cable is environmentally qualified (including cable associated with nonsafety-related equipment). Therefore, harsh environment-induced failures in cables associated with nonsafety-related equipment (producing undesirable operation or failure of nonsafety-related equipment) will not occur.

D. RESULTS

The combination of the approach outlined in Section B and the plant design criteria of Section C resulted in the following inclusions and exclusions from environmental qualification requirements.

1. Electrical equipment which have been included in the DAEC environmental qualification program is summarized below.
 - a. Equipment whose active function is essential to the performance of a safety function (during a LOCA or other HELB)

- b. Containment isolation valves and pilot solenoid valves in the case of air-operated control valves (regardless of whether the equipment is normally closed or fails safe)
 - c. Isolation valves which interface between nonsafety and safety systems
 - d. Isolation valve logic components
 - e. Accident monitoring instrumentation
2. Electrical equipment excluded from the DAEC environmental qualification program is described below.
- a. Instrument loops performing an alarm or display function
 - b. Nonessential electric loads tripped or transferred from essential buses by a LOCA initiation signal
 - c. Nonessential electric loads separated by isolation devices
 - d. Nonessential fail-safe devices normally in a fail-safe position where controls are located in a mild environment and no active safety function is required (excluding containment isolation valves, containment isolation pilot valves, and safety system interface isolation valves).
 - e. Other electrical equipment not needed for mitigation of a LOCA or HELB

3. CONCLUSIONS

As described in Section B, the scope of the system review effort (conducted during development of the DAEC response to NRC IE Bulletin 79-01B and subsequent environmental qualification submittals) included both safety-related and nonsafety-related equipment. On a system and instrument loop basis, potential failures affecting performance of system safety functions were investigated. Although nonsafety-related equipment within the scope of Paragraph b(2) of 10 CFR 50.49 has not been uniquely identified in environmental qualification submittals to the NRC, equipment with potential for a failure (in a manner detrimental to safety) have been included in the DAEC environmental qualification program.

XI. REFERENCES

1. Iowa Electric Letter LDR-80-310, L.D. Root to J. Keppler (NRC), dated October 31, 1980, transmitting the DAEC Response to NRC IE Bulletin 79-01B Environmental Qualification of Class 1E Equipment
2. Iowa Electric Letter LDR-81-257, L.D. Root to H. Denton (NRC), dated September 3, 1981, transmitting the DAEC Response to the NRC Safety Evaluation Report on Environmental Qualification of Safety-Related Electrical Equipment
3. Iowa Electric Letter LDR-82-013, L.D. Root to H. Denton (NRC), dated January 29, 1982, transmitting the DAEC First Semiannual Report on the Environmental Qualification Program for Safety-Related Electrical Equipment, Iowa Electric Light and Power Company, Docket 50-331, January 15, 1982
4. Iowa Electric Letter LDR-82-191, L.D. Root to H. Denton (NRC), dated July 15, 1982, transmitting the DAEC Second Semiannual Report on the Environmental Qualification Program for Safety-Related Electrical Equipment, July 15, 1982
5. Iowa Electric Letter NG-83-0544, L.D. Root to H. Denton (NRC), dated February 11, 1983, transmitting the DAEC Combined Response to NRC Safety Evaluation Report and Third Semiannual Report on the Environmental Qualification Program for Safety-Related Electrical Equipment, February 4, 1983
6. Iowa Electric Letter NG-83-1809, L.D. Root to H. Denton (NRC), dated May 20, 1983, transmitting DAEC Combined Response to 10 CFR 50.49 and NRC Safety Evaluation Report Clarification
7. Iowa Electric Letter LDR-82-0140, L.D. Root to H. Denton (NRC), dated May 28, 1982, transmitting Iowa Electric's Integrated Program for Modification of the Duane Arnold Energy Center

MASTER LIST OF HARSH ENVIRONMENT
CLASS 1E ELECTRICAL EQUIPMENT

September 22, 1983

APPENDIX A

MASTER LIST OF HARSH ENVIRONMENT
CLASS 1E ELECTRICAL EQUIPMENT

TABLE OF CONTENTS

System Name

Accident Monitoring Instrumentation
Ancillary Components
Automatic Depressurization
Containment Atmosphere Control
Core Spray
Drywell Cooling Water
Engineered Safeguard Rooms H&V
High-Pressure Coolant Injection
Leak Detection
Main Steam Line Isolation Valve Leakage Control
Nuclear Boiler
Post-Accident Sampling
Radwaste Sump
Reactor Building Cooling Water
Reactor Core Isolation Cooling
Reactor Protection
Reactor Recirculation
Reactor Water Cleanup
Residual Heat Removal
Residual Heat Removal Service Water
Standby Gas Treatment

The following motor operators contain position switches that are part of Accident Monitoring Instrumentation but do not have their own unique plant identification number:

PLANT-ID	SYSTEM	PLANT-ID	SYSTEM
MO-2100	Core Spray	MO-1900	Residual Heat Removal
MO-2104	Core Spray	MO-1902	Residual Heat Removal
MO-2112	Core Spray	MO-1903	Residual Heat Removal
MO-2115	Core Spray	MO-1904	Residual Heat Removal
MO-2117	Core Spray	MO-1905	Residual Heat Removal
MO-2120	Core Spray	MO-1908	Residual Heat Removal
MO-2124	Core Spray	MO-1909	Residual Heat Removal
MO-2132	Core Spray	MO-1913	Residual Heat Removal
MO-2135	Core Spray	MO-1921	Residual Heat Removal
MO-2137	Core Spray	MO-1932	Residual Heat Removal
MO-2146	Core Spray	MO-1933	Residual Heat Removal
MO-2147	Core Spray	MO-1934	Residual Heat Removal
MO-2238	High Pressure Coolant Injection	MO-1935	Residual Heat Removal
MO-2239	High Pressure Coolant Injection	MO-1970	Residual Heat Removal
MO-2312	High Pressure Coolant Injection	MO-1989	Residual Heat Removal
MO-2321	High Pressure Coolant Injection	MO-2000	Residual Heat Removal
MO-4423	Nuclear Boiler	MO-2001	Residual Heat Removal
MO-4424	Nuclear Boiler	MO-2003	Residual Heat Removal
MO-4841A	Reactor Building Cooling Water	MO-2004	Residual Heat Removal
MO-4841B	Reactor Building Cooling Water	MO-2005	Residual Heat Removal
MO-2400	Reactor Core Isolation Cooling	MO-2006	Residual Heat Removal
MO-2401	Reactor Core Isolation Cooling	MO-2007	Residual Heat Removal
MO-2512	Reactor Core Isolation Cooling	MO-2009	Residual Heat Removal
MO-2516	Reactor Core Isolation Cooling	MO-2012	Residual Heat Removal
MO-2517	Reactor Core Isolation Cooling	MO-2015	Residual Heat Removal
MO-2700	Reactor Water Cleanup	MO-2038	Residual Heat Removal
MO-2701	Reactor Water Cleanup	MO-2069	Residual Heat Removal

DUANE ARNOLD EQDS SECONDARY REPORT
SORTED BY SYSTEM

PAGE: 1

SYSTEM: ACCIDENT MONITORING INSTRUMENTATION

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RDN- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
FT-1971A	DIFFERENTIAL PRESSURE TRANSMIT	ITT BARTON	368	SE CRNR RM/1C129A	716' -9"	HARSH	M120/E7	E121/57	M405-1/C
FT-1971B	DIFFERENTIAL PRESSURE TRANSMIT	ITT BARTON	368	NW CRNR RM/1C129B	716' -9"	HARSH	M119/E3	E121/57	M405-1/E
FT-2110	FLOW TRANSMITTER	GE	555111BDAA-3P	SE CRNR RM/1C123	716' -9"	HARSH	M121/F5	E121/9	M405-1/E
FT-2130	FLOW TRANSMITTER	GE	555111BDAA-3P	NW CRNR RM/1C124	716' -9"	HARSH	M121/D5	E121/10	M405-1/C
LT-4396A	LEVEL TRANSMITTER	ITT BARTON	763	TORUS ROOM NORTH	716' -9"	HARSH	M143/B6	E122/19A	E316/F6
LT-4396B	LEVEL TRANSMITTER	ITT BARTON	763	TORUS ROOM NORTH	716' -9"	HARSH	M143/B4	E122/19A	E316/E3
LT-4397A	LEVEL/PRESSURE TRANSMITTER	ITT BARTON	764	TORUS ROOM NORTH	716' -9"	HARSH	M143/B5	E122/20	E316/F6
LT-4397B	LEVEL/PRESSURE TRANSMITTER	ITT BARTON	764	TORUS ROOM NORTH	716' -9"	HARSH	M143/B5	E122/20	E316/E3
PS-4400A	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/E4	E121/2B	M331/C3
PS-4400B	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/E4	E121/2B	M331/C3
PS-4400C	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/E4	E121/2B	M331/C3
PS-4401A	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/E4	E121/2B	M331/C3
PS-4401B	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/E4	E121/2B	M331/C3
PS-4401C	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/E4	E121/2B	M331/C3
PS-4402A	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/C6	E121/2B	M331/C4
PS-4402B	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/C6	E121/2B	M331/C4

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PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
PS-4402C	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/C6	E121/2B	M331/C3
PS-4403A	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/C5	E121/2B	M338/C4
PS-4403B	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/C5	E121/2B	M338/C4
PS-4403C	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/C5	E121/2B	M338/C4
PS-4404A	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/C5	E121/2B	M338/F4
PS-4404B	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/C5	E121/2B	M338/F4
PS-4404C	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/C5	E121/2B	M338/F4
PS-4405A	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/C4	E121/2B	M331/F4
PS-4405B	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/C4	E121/2B	M331/F4
PS-4405C	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/C4	E121/2B	M331/F4
PS-4406A	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/E6	E121/2C	M331/F4
PS-4406B	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/E6	E121/2C	M331/F4
PS-4406C	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/E6	E121/2C	M331/F4
PS-4407A	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/E6	E121/2C	M331/F3
PS-4407B	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/E6	E121/2C	M331/F3
PS-4407C	PRESSURE SWITCH	PRESSURE CONTROLS	A-17-1N	DRYWELL	775' -11"	HARSH	M114/E6	E121/2C	M331/F3

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SYSTEM: ACCIDENT MONITORING INSTRUMENTATION

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
PT-4398A	LEVEL/PRESSURE TRANSMITTER	ITT BARTON	764	RB-S	757' -6"	HARSH	M143/F7	E124/3	E319/E6
PT-4398B	LEVEL/PRESSURE TRANSMITTER	ITT BARTON	764	RB-N	786' -0"	HARSH	M143/D5	E124/3	E320/C4
PT-8404A	PRESSURE TRANSMITTER	GE	GE 555-111DEA	A CRO RR/1C14	757' -6"	HARSH	M184/F8	E122/37	M405-2/E
PT-8404B	PRESSURE TRANSMITTER	GE	GE 555-111DEA	A CRD RR/1C14	757' -6"	HARSH	M184/F8	E122/37	M405-2/E
PT-8404C	PRESSURE TRANSMITTER	GE	GE 555-111DEA	A CRD RR/1C14	757' -6"	HARSH	M184/F8	E122/32	M405-2/E
PT-8404D	PRESSURE TRANSMITTER	GE	GE 555-111DEA	A CRD RR/1C145	757' -6"	HARSH	M184/F8	E122/37	M405-2/E
RE-9184A	RADIATION ELEMENT	VICTOREEN	877-1	DRYWELL	757' -6"	HARSH	M148/C5	E63	E329/E5
RE-9184B	RADIATION ELEMENT	VICTOREEN	877-1	DRYWELL	757' -6"	HARSH	M148/C4	E63	E329/C4
RE-9185A	RADIATION ELEMENT	VICTOREEN	877-1	TORUS ROOM NORTH	716' -9"	HARSH	M148/C5	E63	E316/F6
RE-9185B	RADIATION ELEMENT	VICTOREEN	877-1	TORUS ROOM SOUTH	716' -9"	HARSH	M148/C4	E63	E317/G2
TE-1945C	TEMPERATURE ELEMENT (THERMOCOUP)	NECI	UNKNOWN	NW CRNR RM	731' -4"	HARSH	M119/E3	E121/58	E316/E7
TE-1945E	TEMPERATURE ELEMENT (THERMOCOUP)	NECI	UNKNOWN	SE CRNR RM	731' -4"	HARSH	M120/D7	E121/58	E317/E3
TE-4324	TEMPERATURE ELEMENT (RTD)	BURNS ENGINEERING	TYPE E	TORUS ROOM	716' -9"	HARSH	M-143		NA
TE-4325	TEMPERATURE ELEMENT (RTD)	BURNS ENGINEERING	TYPE E	TORUS ROOM	716' -9"	HARSH	M-143		NA
TE-4386E	TEMPERATURE ELEMENT (RTD)	LEEDS & NORTHRUP	8920-404-00-3	DRYWELL	742' -9"	HARSH	M143/D6	E122/20	E331/C3
TE-4386F	TEMPERATURE ELEMENT (RTD)	LEEDS & NORTHRUP	8920-404-00-3	DRYWELL	742' -9"	HARSH	M143/D6	E122/20	E331/F6

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SYSTEM: ACCIDENT MONITORING INSTRUMENTATION

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
TE-4386G	TEMPERATURE ELEMENT (RTD)	LEEDS & NORTHRUP	8920-404-00-3	DRYWELL	757' -6"	HARSH	M143/D6	E 122/20	E329/B4
TE-4386H	TEMPERATURE ELEMENT (RTD)	LEEDS & NORTHRUP	8920-404-00-3	DRYWELL	757' -6"	HARSH	M143/D6	E 122/20	E329/G4
TE-4386J	TEMPERATURE ELEMENT (RTD)	LEEDS & NORTHRUP	8920-404-00-3	DRYWELL	761' -4"	HARSH	M143/E6	E 122/20	E330/D2
TE-4386K	TEMPERATURE ELEMENT (RTD)	LEEDS & NORTHRUP	8920-404-00-3	DRYWELL	761' -4"	HARSH	M143/E6	E 122/20	E330/D6
TE-4386L	TEMPERATURE ELEMENT (RTD)	LEEDS & NORTHRUP	8920-404-00-3	DRYWELL	761' -4"	HARSH	M143/E6	E 122/20	E330/F5
TE-4386M	TEMPERATURE ELEMENT (RTD)	LEEDS & NORTHRUP	8920-404-00-3	DRYWELL	761' -9"	HARSH	M143/D6	E 122/20	E331/D4
ZS-1972	SOLENOID VALVE INTEGRAL LIMIT	TARGET ROCK	72V001 (ZS)	NW CRNR RM	716' -9"	HARSH	M119/D3	E 122/13	E316/E8
ZS-1973	SOLENOID VALVE INTEGRAL LIMIT	TARGET ROCK	72V001 (ZS)	NW CRNR RM	716' -9"	HARSH	M119/D2	E 122/13	E316/E8
ZS-2051	SOLENOID VALVE INTEGRAL LIMIT	TARGET ROCK	72V001 (ZS)	SE CRNR RM	716' -9"	HARSH	M120/D7	E 122/13	E317/D3
ZS-2052	SOLENOID VALVE INTEGRAL LIMIT	TARGET ROCK	72V001 (ZS)	SE CRNR RM	716' -9"	HARSH	M120/D8	E 122/13	E317/D3
ZS-3704	POSITION SWITCH	MICRO SWITCH	DTF2-2RN-RH	TORUS ROOM SOUTH	716' -9"	HARSH	M137/H7	E 122/9	E317/F4
ZS-3705	POSITION SWITCH	MICRO SWITCH	DTF2-2RN-RH	TORUS ROOM SOUTH	716' -9"	HARSH	M137/H7	E 122/9	E317/F4
ZS-3728	POSITION SWITCH	MICRO SWITCH	DTF2-2RN-RH	TORUS ROOM NORTH	716' -9"	HARSH	M137/D7	E 122/9	E316/D6
ZS-3729	POSITION SWITCH	MICRO SWITCH	DTF2-2RN-RH	TORUS ROOM NORTH	716' -9"	HARSH	M137/D7	E 122/9	E316/D6
ZS-4304	POSITION SWITCH	MICRO SWITCH	OPD-AR	NE CRNR RM	735' -7"	HARSH	M143/A7	E 122/23	E316/E3
ZS-4305	POSITION SWITCH	MICRO SWITCH	OPD-AR	NE CRNR RM	735' -7"	HARSH	M143/B7	E 122/23	E316/E2

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SYSTEM: ACCIDENT MONITORING INSTRUMENTATION

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
ZS-4306	POSITION SWITCH	MICRO SWITCH	OPD-AR	RHR VALVE ROOM	757' -6"	HARSH	M143/E2	E122/13	E318/E6
ZS-4307	POSITION SWITCH	MICRO SWITCH	OPD-AR	RHR VALVE ROOM	757' -6"	HARSH	M143/E3	E122/12	E318/E6
ZS-4308	POSITION SWITCH	MICRO SWITCH	OPD-AR	RHR VALVE ROOM	757' -6"	HARSH	M143/E3	E122/12	E318/C6
ZS-4311	POSITION SWITCH	MICRO SWITCH	DTF2-2RN-RH	RHR VALVE ROOM	757' -6"	HARSH	M143/F3	E122/13	E319/G7
ZS-4312	POSITION SWITCH	MICRO SWITCH	DTF2-2RN-RH	RHR VALVE ROOM	757' -6"	HARSH	M143/F3	E122/12	E318/D7
ZS-4313	POSITION SWITCH	MICRO SWITCH	DTF2-2RN-RH	RHR VALVE ROOM	757' -6"	HARSH	M143/F3	E122/12	E319/G7
ZS-4331A	SOLENOID VALVE INTEGRAL LIMIT	TARGET ROCK	72V-004 (ZS)	RHR VLV RM	757' -6"	HARSH	M143/C2	E122/33-	M405-2/E
ZS-4331B	SOLENOID VALVE INTEGRAL LIMIT	TARGET ROCK	72V-004 (ZS)	RHR VLV RM	757' -6"	HARSH	M143/C2	E122/33-	M405-2/E
ZS-4332A	SOLENOID VALVE INTEGRAL LIMIT	TARGET ROCK	72V-004 (ZS)	RB-S	786' -0"	HARSH	M143/C2	E122/33-	M405-3/D
ZS-4332B	SOLENOID VALVE INTEGRAL LIMIT	TARGET ROCK	72V-004 (ZS)	RB-S	786' -0"	HARSH	M143/C2	E122/33-	M405-3/D
ZS-4333A	SOLENOID VALVE INTEGRAL LIMIT	TARGET ROCK	72V-004 (ZS)	TORUS ROOM SOUTH	716' -9"	HARSH	M143/C2	E122/33-	M405-1/D
ZS-4333B	SOLENOID VALVE INTEGRAL LIMIT	TARGET ROCK	72V-004 (ZS)	TORUS ROOM SOUTH	716' -9"	HARSH	M143/C2	E122/33-	M405-1/D
ZS-4334A	SOLENOID VALVE INTEGRAL LIMIT	TARGET ROCK	72V-004 (ZS)	TORUS ROOM NORTH	'	HARSH	M143/C2	E122/33-	M405-1/E
ZS-4334B	SOLENOID VALVE INTEGRAL LIMIT	TARGET ROCK	72V-004 (ZS)	TORUS ROOM NORTH	716' -9"	HARSH	M143/C2	E122/33-	M405-1/E
ZS-4639	POSITON SWITCH	NAMCO	EA-180	DRYWELL	798' -0"	HARSH	M116/F6	E122/10	E330/B5
ZS-4640	POSITION SWITCH	NAMCO	SAI-131	RWCU HEAT EXCH ROOM	786' -0"	HARSH	M116/F7	E122/10	E321/E5

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SYSTEM: ACCIDENT MONITORING INSTRUMENTATION

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
ZS-5703A	POSITION SWITCH	MICRO SWITCH	DTF2-2RN-RH	TORUS ROOM SOUTH	716' -9"	HARSH	M157/H7	E113/94	E317/E5
ZS-5703B	POSITION SWITCH	MICRO SWITCH	DTF2-2RN-RH	TORUS ROOM SOUTH	716' -9"	HARSH	M157/G7	E113/94	E317/H7
ZS-5704A	POSITION SWITCH	MICRO SWITCH	DTF2-2RN-RH	TORUS ROOM SOUTH	716' -9"	HARSH	M157/G6	E113/94	E317/E5
ZS-5704B	POSITION SWITCH	MICRO SWITCH	DTF2-2RN-RH	TORUS ROOM SOUTH	716' -9"	HARSH	M157/G6	E113/94	E317/G7
ZS-5718A	POSITION SWITCH	MICRO SWITCH	DTF2-2RN-RH	TORUS ROOM SOUTH	716' -9"	HARSH	M157/C8	E113/94	E317/E5
ZS-5718B	POSITION SWITCH	MICRO SWITCH	DTF2-2RN-RH	TORUS ROOM NORTH	716' -9"	HARSH	M157/A8	E113/94	E316/C7
ZS-5719A	POSITION SWITCH	MICRO SWITCH	DTF2-2RN-RH	TORUS ROOM SOUTH	716' -9"	HARSH	M157/B7	E113/94	E317/E5
ZS-5719B	POSITION SWITCH	MICRO SWITCH	DTF2-2RN-RH	TORUS ROOM NORTH	716' -9"	HARSH	M157/A7	E113/94	E316/C7
ZS-5815A	POSITION SWITCH	MICRO SWITCH	OPD-AR	SGT ROOM	786' -0"	HARSH	M158/G3	E113/11	M643/A3
ZS-5815B	POSITION SWITCH	MICRO SWITCH	OPD-AR	SGT ROOM	786' -0"	HARSH	M158/C3	E113/11	M643/A3
ZS-5825A	POSITION SWITCH	MICRO SWITCH	OPD-AR	SGT ROOM	786' -0"	HARSH	M158/F6	E113/11	E315/G5
ZS-5825B	POSITION SWITCH	MICRO SWITCH	OPD-AR	SGT ROOM	786' -0"	HARSH	M158/D6	E113/11	E315/F5
ZS-7602A	POSITION SWITCH	MICRO SWITCH	OPD-AR	SGT ROOM	786' -0"	HARSH	M176/A4	E113/64	E315/G3
ZS-7602B	POSITION SWITCH	MICRO SWITCH	OPD-AR	SGT ROOM	786' -0"	HARSH	M176/A4	E113/64	E315/G3
ZS-8773A	POSITION SWITCH	NAMCO	EA170-41302	NW CRNR RM	716' -9"	HARSH	M187/C3	E113/64	E316/F7
ZS-8773B	POSITION SWITCH	NAMCO	EA170-41302	NW CRNR RM	716' -9"	HARSH	M187/C2	E113/65	E316/F7

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SYSTEM: ANCILLARY COMPONENTS

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
CABLE-COAX-BIW	600V CABLE	BOSTON INSULATED	RG-6A/U, 59B/	VARIOUS	V'RIO	HARSH	NA	NA	NA
CABLE-COAX-RAY	600V CABLE	RAYCHEM	NA	VARIOUS	V'RIO	HARSH	NA	NA	NA
CABLE-COAX1-ROC	600V CABLE	ROCKBESTOS	RSS-6-104, 10 CELLULAR DI	RB-S	757' -6"	HARSH	NA	NA	NA
CABLE-COAX2-ROC	600V CABLE	ROCKBESTOS	RSS-6-104 SOLID DIELECT	VARIOUS	V'RIO	HARSH	NA	NA	NA
CABLE-CONTR-OL-A/E	600V CABLE	ANACONDA ERICSON	NA	VARIOUS	N'	HARSH	NA	NA	NA
CABLE-CONTR-OL-OKO	600V CABLE	OKONITE	NA	VARIOUS	V'RIO	HARSH	NA	NA	NA
CABLE-CONTR-OL-ROC	600V CABLE	ROCKBESTOS	FIREWALL III,	VARIOUS	V'RIO	HARSH	NA	NA	NA
CABLE-INSTR-A/E	600V CABLE	ANACONDA ERICSON	NA	VARIOUS	N'	HARSH	NA	NA	NA
CABLE-INSTR-OKO	600V CABLE	OKONITE	NA	VARIOUS	V'RIO	HARSH	NA	NA	NA
CABLE-INSTR-ROC	600V CABLE	ROCKBESTOS	FIREWALL III,	VARIOUS	V'RIO	HARSH	NA	NA	NA
CABLE-POWER-A/E	600V CABLE	ANACONDA ERICSON	NA	VARIOUS	N'	HARSH	NA	NA	NA
CABLE-POWER-KER	5 KV CABLE	KERITE	HT WITH NS JA	OUTSIDE DRYWELL	V'RIO	HARSH	NA	NA	NA
CABLE-POWER-OKO	600V CABLE	OKONITE	NA	VARIOUS	V'RIO	HARSH	NA	NA	NA
CABLE-POWER-ROC	600V CABLE	ROCKBESTOS	FIREWALL III,	VARIOUS	V'RIO	HARSH	NA	NA	NA
INSTRUMENT CABLE	CABLE ASSEMBLY	VICTOREEN	878-1-9	VARIOUS	V'RIO	HARSH	NA	NA	NA
JX-100A	ELECTRICAL PENETRATION	GE	NS02-II CANNISTER TYP	DRYWELL	761' -4"	HARSH	NA	E807	M41

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SYSTEM: ANCILLARY COMPONENTS

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
JX-100B	ELECTRICAL PENETRATION	GE	NSO2-II CANNISTER TYP	DRYWELL	761' -4"	HARSH	NA	E807	M41
JX-100C	ELECTRICAL PENETRATION	GE	NSO2-II CANNISTER TYP	DRYWELL	761' -4"	HARSH	NA	E807	M41
JX-100D	ELECTRICAL PENETRATION	GE	NSO2-II CANNISTER TYP	DRYWELL	761' -4"	HARSH	NA	E807	M41
JX-101A	ELECTRICAL PENETRATION	GE	NSO3 CANNISTER TYP	DRYWELL	757' -6"	HARSH	NA	E807	M41
JX-101B	ELECTRICAL PENETRATION	GE	NSO3 CANNISTER TYP	DRYWELL	757' -6"	HARSH	NA	E807	M41
JX-103	ELECTRICAL PENETRATIONS	GE	NSO4 CANNISTER TYP	DRYWELL	761' -4"	HARSH	NA	E807	M41
JX-104A	ELECTRICAL PENETRATIONS	GE	NSO4 CANNISTER TYP	DRYWELL	761' -4"	HARSH	NA	E807	M41
JX-104B	ELECTRICAL PENETRATIONS	GE	NSO4 CANNISTER TYP	DRYWELL	761' -4"	HARSH	NA	E807	M41
JX-104C	ELECTRICAL PENETRATIONS	GE	NSO4 CANNISTER TYP	DRYWELL	761' -4"	HARSH	NA	E807	M41
JX-104D	ELECTRICAL PENETRATIONS	GE	NSO4 CANNISTER TYP	DRYWELL	761' -4"	HARSH	NA	E807	M41
JX-105A	ELECTRICAL PENETRATIONS	GE	NSO4 CANNISTER TYP	DRYWELL	761' -4"	HARSH	NA	E807	M41
JX-105B	ELECTRICAL PENETRATIONS	GE	NSO4 CANNISTER TYP	DRYWELL	761' -4"	HARSH	NA	E807	M41
JX-105C	ELECTRICAL PENETRATIONS	GE	NSO4 CANNISTER TYP	DRYWELL	761' -4"	HARSH	NA	E807	M41
JX-105D	ELECTRICAL PENETRATIONS	GE	NSO4 CANNISTER TYP	DRYWELL	761' -4"	HARSH	NA	E807	M41
SPLICING KI TS	SPLICING KITS	RAYCHEM	WCSF-N	VARIOUS	V'RIO	HARSH	NA	NA	NA
TB GRP A	TERMINAL BLOCKS	AMERACE CORP	NQB108	VARIOUS	V'RIO	HARSH	NA	NA	NA

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SYSTEM: ANCILLARY COMPONENTS

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
TB GRP B	TERMINAL BLOCKS	AMERACE CORP	NQB108	VARIOUS	V'RIO	HARSH	NA	NA	NA

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SYSTEM: AUTOMATIC DEPRESS- URIZATION

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
PS-1917A	PRESSURE SWITCH	STATIC-O-RING	5N-AA3	NW CRNR RM/1C-129B	716' -9"	HARSH	M119/B6	E121/56A	E316/E7
PS-1917B	PRESSURE SWITCH	STATIC-O-RING	12N-AA5	NW CRNR RM/1C-129B	716' -9"	HARSH	M119/B6	E121/56A	E316/E7
PS-1925A	PRESSURE SWITCH	STATIC-O-RING	5N-AA3	NW CRNR RM/1C-129B	716' -9"	HARSH	M119/B7	E1221/56	E316/E7
PS-1925B	PRESSURE SWITCH	STATIC-O-RING	12N-AA5	NW CRNR RM/1C-129B	716' -9"	HARSH	M119/B7	E121/56A	E316/E7
PS-2023A	PRESSURE SWITCH	STATIC-O-RING	5N-AA3	SE CRNR RM/1C-129A	716' -9"	HARSH	M120/B4	E121/56	E317/E3
PS-2023B	PRESSURE SWITCH	STATIC-O-RING	12N-AA5	SE CRNR RM/1C-129A	716' -9"	HARSH	M120/B4	E121/56	E317/E3
PS-2024A	PRESSURE SWITCH	STATIC-O-RING	5N-AA3	SE CRNR RM/1C-129A	716' -9"	HARSH	M120/B2	E121/56	E317/E3
PS-2024B	PRESSURE SWITCH	STATIC-O-RING	12N-AA5	SE CRNR RM/1C-129A	716' -9"	HARSH	M120/B2	E121/56	E317/E3
PS-2107A	PRESSURE SWITCH	STATIC-O-RING	5N-AA3	SE CRNR RM/1C-123	716' -9"	HARSH	M121/E3	E121/9	E317/D3
PS-2107B	PRESSURE SWITCH	STATIC-O-RING	5N-AA3	SE CRNR RM/1C-123	716' -9"	HARSH	M121/D3	E121/9	E317/D3
PS-2127A	PRESSURE SWITCH	STATIC-O-RING	5N-AA3	NW CRNR RM/1C-124	716' -9"	HARSH	M121/C5	E121/10	E316/E7
PS-2127B	PRESSURE SWITCH	STATIC-O-RING	5N-AA3	NW CRNR RM/1C-124	716' -9"	HARSH	M121/C5	E121/10	E316/E7
SV-4400	SOLENOID VALVE	AUTOMATIC VALVE C	C5450-5	DRYWELL	775' -11"	HARSH	M114/F5	E121/2	E330/C4
SV-4402	SOLENOID VALVE	AUTOMATIC VALVE C	C5450-5	DRYWELL	775' -11"	HARSH	M114/D6	E121/2	E330/B4
SV-4405	SOLENOID VALVE	AUTOMATIC VALVE C	C5450-5	DRYWELL	775' -11"	HARSH	M114/D4	E121/2	E330/F4
SV-4406	SOLENOID VALVE	AUTOMATIC VALVE C	C5450-5	DRYWELL	775' -11"	HARSH	M114/F5	E121/2	E330/F4

DUANE ARNOLD EQDS SECONDARY REPORT
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SYSTEM: CONTAINMENT ATMOSPHERE CONTROL

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
MO-4320A	MOTOR OPERATOR	LIMITORQUE	SMB-000, AC-C	HPCI ROOM	716' -9"	HARSH	M143/C3	E122/31	E317/B4
MO-4320B	MOTOR OPERATOR	LIMITORQUE	SMB-000, AC-C	HPCI ROOM	716' -9"	HARSH	M143/C4	E122/31	E317/B3
PDIS-4304	DIFFERENTIAL PRESSURE INDICATI	ITT BARTON	288A	NE CRNR RM	735' -7"	HARSH	M143/B7	E122/23	E316/F3
PDIS-4305	DIFFERENTIAL PRESSURE INDICATI	ITT BARTON	288A	NE CRNR RM	735' -7"	HARSH	M143/B8	E122/23	E316/F3
PS-4348	FLOW INDICATING SWITCH	ITT BARTON	289	RB-N	757' -6"	HARSH	M143/C4	E122/12	E318/A5
SV-4300X	SOLENOID VALVE	ASCO	NP831665E	NE CRNR RM	735' -7"	HARSH	M143/D7	E122/12	E316/E2
SV-4302X	SOLENOID VALVE	ASCO	NP831665E	H&V CONTROL VALVE RM	812' -0"	HARSH	M143/D7	E122/12	E322/D4
SV-4303	SOLENOID VALVE	ASCO	NP831665E	H&V CONTROL VALVE RM	812' -0"	HARSH	M143/D7	E122/13	E322/D4
SV-4304	SOLENOID VALVE	ASCO	831665	NE CRNR RM	716' -9"	HARSH	M143/B7	E122/23	E316/F3
SV-4305	SOLENOID VALVE	ASCO	831665	NE CRNR RM	716' -9"	HARSH	M143/B7	E122/23	E316/F3
SV-4306	SOLENOID VALVE	ASCO	NP831665E	RHR VALVE ROOM	757' -6"	HARSH	M143/F1	E122/13	E318/E6
SV-4307	SOLENOID VALVE	ASCO	NP831665E	RHR VALVE ROOM	757' -6"	HARSH	M143/F2	E122/12	E318/D6
SV-4308	SOLENOID VALVE	ASCO	NP831665E	RHR VALVE ROOM	757' -6"	HARSH	M143/E3	E122/12	E318/D6
SV-4309	SOLENOID VALVE	ASCO	NP831665E	NE CRNR RM	716' -9"	HARSH	M143/C7	E122/12	E316/E2
SV-4310	SOLENOID VALVE	ASCO	NP831665E	H&V CONTROL VALVE RM	812' -0"	HARSH	M143/D7	E122/12	E322/D4
SV-4311	SOLENOID VALVE	ASCO	NP831665E	RHR VALVE ROOM	757' -6"	HARSH	M143/F3	E122/13	E318/D6

DUANE ARNOLD EQDS SECONDARY REPORT
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SYSTEM: CONTAINMENT ATMOSPHERE CONTROL

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
SV-4312	SOLENOID VALVE	ASCO	NP831665E	RHR VALVE ROOM	757' -6"	HARSH	M143/F3	E122/12	E318/D6
SV-4313	SOLENOID VALVE	ASCO	NP831665E	RHR VALVE ROOM	757' -6"	HARSH	M143/F3	E122/12	E318/D6
SV-4331A	SOLENOID VALVE	TARGET ROCK	72V-004	RHR VALVE ROOM	757' -6"	HARSH	M143/C2	E122/34	E319/G6
SV-4331B	SOLENOID VALVE	TARGET ROCK	72V-004	RHR VALVE ROOM	757' -6"	HARSH	M143/C2	E122/34	E319/G6
SV-4332A	SOLENOID VALVE	TARGET ROCK	72V-004	RB-S	786' -0"	HARSH	M143/C2	E122/33	E321/F6
SV-4332B	SOLENOID VALVE	TARGET ROCK	72V-004	RB-S	786' -0"	HARSH	M143/C2	E122/33	E321/F6
SV-4333A	SOLENOID VALVE	TARGET ROCK	72V-004	TORUS ROOM SOUTH	716' -9"	HARSH	M143/C2	E122/34	E317/F6
SV-4333B	SOLENOID VALVE	TARGET ROCK	72V-004	TORUS ROOM SOUTH	716' -9"	HARSH	M143/C2	E122/34	E317/E6
SV-4334A	SOLENOID VALVE	TARGET ROCK	72V-004	TORUS ROOM NORTH	716' -9"	HARSH	M143/C2	E122/33	E316/D6
SV-4334B	SOLENOID VALVE	TARGET ROCK	72V-004	TORUS ROOM NORTH	716' -9"	HARSH	M143/C2	E122/33	E316/D6
SV-4371B	SOLENOID VALVE	ASCO	NP831665E	DRYWELL	757' -6"	HARSH	M143/F5	E122/24	E329/B3
SV-8101A	SOLENOID VALVE	TARGET ROCK	72V-003	RB-S	757' -6"	HARSH	M181/F5	E122/29	E319/E6
SV-8101B	SOLENOID VALVE	TARGET ROCK	72V-003	RB-N	757' -6"	HARSH	M181/F4	E122/29	E318/E4
SV-8102A	SOLENOID VALVE	TARGET ROCK	72V-003	RB-S	757' -6"	HARSH	M181/F5	E122/29	E319/E6
SV-8102B	SOLENOID VALVE	TARGET ROCK	72V-003	RB-N	757' -6"	HARSH	M181/F4	E122/29	E318/E4
SV-8103A	SOLENOID VALVE	TARGET ROCK	72V-003	RB-S	757' -6"	HARSH	M181/F5	E122/29	E319/E6

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SYSTEM: CONTAINMENT ATMOSPHERE CONTROL

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
SV-8103B	SOLENOID VALVE	TARGET ROCK	72V-003	RB-N	757' -6"	HARSH	M181/F4	E122/29	E318/E4
SV-8104A	SOLENOID VALVE	TARGET ROCK	72V-003	RB-S	757' -6"	HARSH	M181/F5	E122/29	E319/E6
SV-8104B	SOLENOID VALVE	TARGET ROCK	72V-003	RB-N	757' -6"	HARSH	M181/F4	E122/29	E318/F4
SV-8105A	SOLENOID VALVE	TARGET ROCK	72V-003	RB-S	757' -6"	HARSH	M181/E5	E122/29	E319/E6
SV-8105B	SOLENOID VALVE	TARGET ROCK	72V-003	RB-N	757' -6"	HARSH	M181/E4	E122/29	E318/E5
SV-8106A	SOLENOID VALVE	TARGET ROCK	72V-003	RB-S	757' -6"	HARSH	M181/E5	E122/29	E319/E6
SV-8106B	SOLENOID VALVE	TARGET ROCK	72V-003	RB-N	757' -6"	HARSH	M181/E4	E122/29	E318/E5
SV-8107A	SOLENOID VALVE	TARGET ROCK	72V-003	TORUS ROOM NORTH	716' -9"	HARSH	M181/D5	E122/29	E316/D3
SV-8107B	SOLENOID VALVE	TARGET ROCK	72V-003	TORUS ROOM SOUTH	716' -9"	HARSH	M181/D4	E122/29	E317/F7
SV-8108A	SOLENOID VALVE	TARGET ROCK	72V-003	TORUS ROOM NORTH	716' -9"	HARSH	M181/E5	E122/29	E316/D3
SV-8108B	SOLENOID VALVE	TARGET ROCK	72V-003	TORUS ROOM SOUTH	716' -9"	HARSH	M181/E4	E122/29	E317/F7
SV-8109A	SOLENOID VALVE	TARGET ROCK	72V-003	TORUS ROOM SOUTH	716' -9"	HARSH	M181/D5	E122/29	E317/E4
SV-8109B	SOLENOID VALVE	TARGET ROCK	72V-003	TORUS ROOM NORTH	716' -9"	HARSH	M181/D4	E122/29	E316/E6
SV-8110A	SOLENOID VALVE	TARGET ROCK	72V-003	TORUS ROOM SOUTH	716' -9"	HARSH	M181/D5	E122/29	E317/E4
SV-8110B	SOLENOID VALVE	TARGET ROCK	72V-003	TORUS ROOM NORTH	716' -9"	HARSH	M181/D4	E122/29	E316/E6

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SYSTEM: CORE SPRAY

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
FIS-2111	FLOW INDICATING SWITCH	ITT BARTON	289	SE CRNR RM/1C-123	716' -9"	HARSH	M121/F5	E121/6	E317/E3
FIS-2131	FLOW INDICATING SWITCH	ITT BARTON	289	NW CRNR RM/1C-124	716' -9"	HARSH	M121/G5	E121/6	E316/E7
MO-2100	MOTOR OPERATOR	LIMITORQUE	SMB-00, AC-CL	SE CRNR RM	716' -9"	HARSH	M121/B5	E121/4	E317/D3
MO-2104	MOTOR OPERATOR	LIMITORQUE	SMB-000, AC-C	TORUS ROOM SOUTH	716' -9"	HARSH	M121/D4	E121/6	E317/E5
MO-2112	MOTOR OPERATOR	LIMITORQUE	SMB-1, AC-CLA	TORUS ROOM SOUTH	716' -9"	HARSH	M121/F5	E121/7	E317/D5
MO-2115	MOTOR OPERATOR WITH MOTOR BRAK	LIMITORQUE	SMB-O, AC-CLA	RB-S	786' -0"	HARSH	M121/G5	E121/8	E321/D5
MO-2117	MOTOR OPERATOR WITH MOTOR BRAK	LIMITORQUE	SMB-2, AC-CLA	RWCU HEAT EXCH ROOM	786' -0"	HARSH	M121/G6	E121/5	E321/E5
MO-2120	MOTOR OPERATOR	LIMITORQUE	SMB-00, AC-CL	NW CRNR RM	716' -9"	HARSH	M121/B5	E121/4	E316/D8
MO-2124	MOTOR OPERATOR	LIMITORQUE	SMB-000, AC-C	TORUS ROOM NORTH	716' -9"	HARSH	M121/D4	E121/6	E316/F6
MO-2132	MOTOR OPERATOR	LIMITORQUE	SMB-1, AC-CLA	TORUS ROOM NORTH	716' -9"	HARSH	M121/E5	E121/7	E316/F5
MO-2135	MOTOR OPERATOR WITH MOTOR BRAK	LIMITORQUE	SMB-O, AC-CLA	RB-N	786' -0"	HARSH	M121/E5	E121/8	E320/F5
MO-2137	MOTOR OPERATOR WITH MOTOR BRAK	LIMITORQUE	SMB-2, AC-CLA	RB-N	786' -0"	HARSH	M121/E6	E121/8	E320/E5
MO-2146	MOTOR OPERATOR	LIMITORQUE	SMB-00, AC-CL	TORUS ROOM NORTH	716' -9"	HARSH	M121/C5	E121/4	E316/C7
MO-2147	MOTOR OPERATOR	LIMITORQUE	SMB-00, AC-CL	TORUS ROOM SOUTH	716' -9"	HARSH	M121/B5	E121/4	E317/D5
1P-211A	PUMP MOTOR	GE	5K6336XC229A	SE CRNR RM	716' -9"	HARSH	M121/C3	E121/3	E317/D2
1P-211B	PUMP MOTOR	GE	5K6336XC229A	NW CRNR RM	716' -9"	HARSH	M121/C4	E121/3	E316/F8

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SYSTEM: DRYWELL COOLING WATER

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
SV-5703A	SOLENOID VALVE	ASCO	206-832-3RU	TORUS ROOM SOUTH	716' -9"	HARSH	M157/G7	E113/94	E317/E5
SV-5703B	SOLENOID VALVE	ASCO	206-832-3RU	TORUS ROOM SOUTH	716' -9"	HARSH	M157/G7	E113/94	E317/H7
SV-5704A	SOLENOID VALVE	ASCO	206-832-3RU	TORUS ROOM SOUTH	716' -9"	HARSH	M157/H6	E113/94	E317/E5
SV-5704B	SOLENOID VALVE	ASCO	206-832-3RU	TORUS ROOM SOUTH	716' -9"	HARSH	M157/H6	E113/94	E317/G7
SV-5718A	SOLENOID VALVE	ASCO	206-832-3RU	TORUS ROOM SOUTH	716' -9"	HARSH	M157/B8	E113/94	E317/E5
SV-5718B	SOLENOID VALVE	ASCO	206-832-3RU	TORUS ROOM NORTH	716' -9"	HARSH	M157/B8	E113/94	E316/C7
SV-5719A	SOLENOID VALVE	ASCO	206-832-3RU	TORUS ROOM SOUTH	716' -9"	HARSH	M157/B7	E113/94	E317/E5
SV-5719B	SOLENOID VALVE	ASCO	206-832-3RU	TORUS ROOM NORTH	716' -9"	HARSH	M157/A7	E113/94	E316/C7

DUANE ARNOLD EQDS SECONDARY REPORT
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SYSTEM: ENGINEERED SAFEGUARD ROOMS H & V

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
1V-AC-11	FAN MOTOR	WESTINGHOUSE	TEFC	NW CRNR RM	747' -6"	HARSH	M171/A6	E113/147	M646/E7
1V-AC-12	FAN MOTOR	WESTINGHOUSE	TEFC	SE CRNR RM	747' -0"	HARSH	M171/A6	E113/147	M660/E3

DUANE ARNOLO EQDS SECONDARY REPORT
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SYSTEM: HIGH PRESSURE COOLANT INJECTION

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
MO-2238	MOTOR OPERATOR WITH MOTOR BRAK	LIMITORQUE	SMB-2, AC-CLAS	ORYWELL	775' -11"	HARSH	M122/G6	E121/14	E330/B5
MO-2239	MOTOR OPERATOR WITH MOTOR BRAK	LIMITORQUE	SMB-3, DC-CLA	STEAM TUNNEL	757' -6"	HARSH	M122/G5	E121/15	E328/D4
MO-2290A	MOTOR OPERATOR	LIMITORQUE	SMB-000, AC-C	TORUS ROOM SOUTH	716' -9"	HARSH	M122/B8	E121/23A	E317/D5
MO-2290B	MOTOR OPERATOR	LIMITORQUE	SMB-000, AC-C	TORUS ROOM SOUTH	716' -9"	HARSH	M122/B8	E121/23A	E317/D5
MO-2312	MOTOR OPERATOR	LIMITORQUE	SMB-3, DC-CLA	STEAM TUNNEL	757' -6"	HARSH	M123/D6	E121/18	E328/D3
MO-2321	MOTOR OPERATOR	LIMITORQUE	SMB-00,DC-CLA	TORUS ROOM SOUTH	716' -9"	HARSH	M123/A7	E121/23	E317/D4

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SYSTEM: LEAK DETECTION

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
TE-2262A	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	HPCI ROOM	716' -9"	HARSH	M122/A4	E124/6	E317/C2
TE-2262B	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	HPCI ROOM	716' -9"	HARSH	M122/A4	E124/6	E317/C2
TE-2263A	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	HPCI ROOM	716' -9"	HARSH	M122/A3	E124/6	M661/D4
TE-2263B	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	HPCI ROOM	716' -9"	HARSH	M122/A3	E124/6	M661/D4
TE-2264A	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	HPCI ROOM	731' -9"	HARSH	M122/A3	E124/7	E317/C3
TE-2264B	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	HPCI ROOM	731' -9"	HARSH	M122/A3	E124/7	E317/C3
TE-2265	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	HPCI ROOM	716' -9"	HARSH	M122/A2	E124/7	M660/C3
TE-2446A	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	RCIC ROOM	724' -6"	HARSH	M124/B8	E124/6	E317/C6
TE-2446B	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	RCIC ROOM	724' -6"	HARSH	M124/B8	E124/6	E317/C6
TE-2447A	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	RCIC ROOM	716' -9"	HARSH	M124/B8	E124/6	E317/D5
TE-2447B	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	RCIC ROOM	716' -9"	HARSH	M124/B8	E124/6	E317/D5
TE-2451A	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	RCIC ROOM	716' -9"	HARSH	M124/B7	E124/7	E317/C5
TE-2451B	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	RCIC ROOM	716' -9"	HARSH	M124/B7	E124/7	E317/C5
TE-2453	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	RCIC ROOM	716' -9"	HARSH	M124/C7	E124/7	M661/B5
TE-2522A	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	TORUS ROOM NORTH	716' -9"	HARSH	M125/B4	E124/6	M646/C3
TE-2522B	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	TORUS ROOM SOUTH	716' -9"	HARSH	M125/B3	E124/6	M660/H8

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SYSTEM: LEAK DETECTION

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
TE-2522C	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	TORUS ROOM SOUTH	716' -9"	HARSH	M125/A4	E124/6	M660/F7
TE-2522D	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	TORUS ROOM SOUTH	716' -9"	HARSH	M125/A3	E124/6	M660/D5
TE-2523A	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	TORUS ROOM NORTH	716' -9"	HARSH	M125/B4	E124/6	E316/E3
TE-2523B	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	TORUS ROOM NORTH	716' -9"	HARSH	M125/B3	E124/6	E316/E3
TE-2523C	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	TORUS ROOM NORTH	716' -9"	HARSH	M125/A4	E124/6	E316/E3
TE-2523D	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	TORUS ROOM NORTH	716' -9"	HARSH	M125/A3	E124/6	E316/E3
TE-2526A	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	TORUS ROOM NORTH	716' -9"	HARSH	M125/B4	E124/7	M646/F4
TE-2526B	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	TORUS ROOM NORTH	716' -9"	HARSH	M125/B2	E124/7	M646/B8
TE-2526C	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	TORUS ROOM SOUTH	716' -9"	HARSH	M125/A4	E124/7	M660/D4
TE-2526D	TEMPERATURE ELEMENT (THERMOCOUC)	NECI	N145C3023	TORUS ROOM NORTH	716' -9"	HARSH	M125/A2	E124/7	M646/B2
TE-2742A	TEMPERATURE ELEMENT (THERMOCOUC)	PYCO	02-9039-08-6	RWCU PUMP ROOM	786' -0"	HARSH	M127/A8	E124/7	M657/E4
TE-2742B	TEMPERATURE ELEMENT (THERMOCOUC)	PYCO	02-9039-08-6	RWCU PUMP ROOM	786' -0"	HARSH	M127/A8	E124/7	M657/E3
TE-2742C	TEMPERATURE ELEMENT (THERMOCOUC)	PYCO	02-9039-08-6	RWCU HEAT EXCH ROOM	786' -0"	HARSH	M127/A8	E124/7	M657/E4
TE-2742D	TEMPERATURE ELEMENT (THERMOCOUC)	PYCO	02-9039-08-6	RWCU HEAT EXCH ROOM	786' -0"	HARSH	M127/A8	E124/7	M657/E6
TE-2742E	TEMPERATURE ELEMENT (THERMOCOUC)	PYCO	02-9039-08-6	RWCU HEAT EXCH ROOM	786' -0"	HARSH	M127/A8	E124/7	E657/F6
TE-2742F	TEMPERATURE ELEMENT (THERMOCOUC)	PYCO	02-9039-08-6	RWCU HEAT EXCH ROOM	786' -0"	HARSH	M127/A8	E124/7	M657/E5

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SYSTEM: LEAK DETECTION

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
TE-2743A	TEMPERATURE ELEMENT (THERMOCOUC)	PYCO	02-9039-08-6	RWCU PUMP ROOM	786' -0"	HARSH	M127/A8	E124/6	M657/D4
TE-2743B	TEMPERATURE ELEMENT (THERMOCOUC)	PYCO	02-9039-08-6	RWCU PUMP ROOM	786' -0"	HARSH	M127/A8	E124/6	M657/E3
TE-2743C	TEMPERATURE ELEMENT (THERMOCOUC)	PYCO	02-9039-08-6	RWCU PUMP ROOM	786' -0"	HARSH	M127/A8	E124/6	M657/E4
TE-2743D	TEMPERATURE ELEMENT (THERMOCOUC)	PYCO	02-9039-08-6	RWCU HEAT EXCH ROOM	786' -0"	HARSH	M127/A8	E124/6	M657/F6
TE-2743E	TEMPERATURE ELEMENT (THERMOCOUC)	PYCO	02-9039-08-6	RWCU HEAT EXCH ROOM	786' -0"	HARSH	M127/A8	E124/6	M657/E6
TE-2743F	TEMPERATURE ELEMENT (THERMOCOUC)	PYCO	02-9039-08-6	RWCU HEAT EXCH ROOM	786' -0"	HARSH	M127/A8	E124/6	M657/E5
TE-2744A	TEMPERATURE ELEMENT (THERMOCOUC)	PYCO	02-9039-08-6	RWCU PUMP ROOM	786' -0"	HARSH	M127/A8	E124/6	M657/F4
TE-2744B	TEMPERATURE ELEMENT (THERMOCOUC)	PYCO	02-9039-08-6	RWCU PUMP ROOM	786' -0"	HARSH	M127/A8	E124/6	M657/F4
TE-2744C	TEMPERATURE ELEMENT (THERMOCOUC)	PYCO	02-9039-08-6	RWCU PUMP ROOM	786' -0"	HARSH	M127/A8	E124/6	M657/E4
TE-2744D	TEMPERATURE ELEMENT (THERMOCOUC)	PYCO	02-9039-08-6	RWCU HEAT EXCH ROOM	786' -0"	HARSH	M127/A8	E124/6	M657/E4
TE-2744E	TEMPERATURE ELEMENT (THERMOCOUC)	PYCO	02-9039-08-6	RWCU HEAT EXCH ROOM	786' -0"	HARSH	M127/A8	E124/6	M657/E4
TE-2744F	TEMPERATURE ELEMENT (THERMOCOUC)	PYCO	02-9039-08-6	RWCU HEAT EXCH ROOM	786' -0"	HARSH	M127/A8	E124/6	M657/F5
TE-4443A	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	STEAM TUNNEL	757' -6"	HARSH	M114/H2	E122/9	E328/D3
TE-4443B	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	STEAM TUNNEL	757' -6"	HARSH	M114/H2	E122/9	E328/D3
TE-4443C	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	STEAM TUNNEL	757' -6"	HARSH	M114/H1	E122/9	E328/D3
TE-4443D	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	STEAM TUNNEL	757' -6"	HARSH	M114/H1	E122/9	E328/D4

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SYSTEM: LEAK DETECTION

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
TE-4444A	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	STEAM TUNNEL	757' -6"	HARSH	M114/H2	E122/9	E328/D2
TE-4444B	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	STEAM TUNNEL	757' -6"	HARSH	M114/H2	E122/9	E328/D3
TE-4444C	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	STEAM TUNNEL	757' -6"	HARSH	M114/H1	E122/9	E328/D3
TE-4444D	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	STEAM TUNNEL	757' -6"	HARSH	M114/H1	E122/9	E328/D4
TE-4445A	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	STEAM TUNNEL	757' -6"	HARSH	M114/H2	E122/9	E328/E2
TE-4445B	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	STEAM TUNNEL	757' -6"	HARSH	M114/H2	E122/9	E328/E3
TE-4445C	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	STEAM TUNNEL	757' -6"	HARSH	M114/H1	E122/9	E328/E3
TE-4445D	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	STEAM TUNNEL	757' -6"	HARSH	M114/H1	E122/9	E328/E4
TE-4446A	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	STEAM TUNNEL	757' -6"	HARSH	M114/H2	E122/9	E328/E2
TE-4446B	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	STEAM TUNNEL	757' -6"	HARSH	M114/H2	E122/9	E328/E3
TE-4446C	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	STEAM TUNNEL	757' -6"	HARSH	M114/H1	E122/9	E328/E3
TE-4446D	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	STEAM TUNNEL	757' -6"	HARSH	M114/H1	E122/9	E328/E4
TE-4477A	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	TURBINE BLDG.	757' -6"	HARSH	M103/E6	E122/9	E309/D8
TE-4477B	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	TURBINE BLDG.	757' -6"	HARSH	M103/F8	E122/9	E308/D7
TE-4478A	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	TURBINE BLDG.	757' -6"	HARSH	M103/F7	E122/9	E309/O7
TE-4478B	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	TURBINE BLDG.	757' -6"	HARSH	M103/F8	E122/9	E308/C7

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SYSTEM: LEAK DETECTION

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
TE-4479A	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	TURBINE BLDG.	757' -6"	HARSH	M103/F6	E122/9	E309/E8
TE-4479B	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	TURBINE BLDG.	757' -6"	HARSH	M103/G8	E122/9	E308/D7
TE-4480A	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	TURBINE BLDG.	757' -6"	HARSH	M103/F6	E122/9	E309/E8
TE-4480B	TEMPERATURE ELEMENT (RTD)	ROSEMOUNT	104MA23ABBB	TURBINE BLDG.	757' -6"	HARSH	M103/F8	E122/9	E308/D7

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SYSTEM: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT.

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
FM-8408A	FLOW TRANSMITTER	S.K. INSTRUMENT	20-9651-8550	STEAM TUNNEL	757' -6"	HARSH	M184/F4	E122/37	E328/B5
FM-8408B	FLOW TRANSMITTER	S.K. INSTRUMENT	20-9651-8550	STEAM TUNNEL	757' -6"	HARSH	M184/C8	E122/37	E328/B5
FM-8408C	FLOW TRANSMITTER	S.K. INSTRUMENT	20-9651-8550	STEAM TUNNEL	757' -6"	HARSH	M184/C3	E122/37	E328/B5
FM-8408D	FLOW TRANSMITTER	S.K. INSTRUMENT	20-9651-8550	STEAM TUNNEL	757' -6"	HARSH	M184/F8	E122/37	E328/B5
MO-8401A	MOTOR OPERATOR	LIMITORQUE	SB-000, AC-CL	STEAM TUNNEL	757' -6"	HARSH	M184/F3	E122/38	E328/B6
MO-8401B	MOTOR OPERATOR	LIMITORQUE	SB-000, AC-CL	STEAM TUNNEL	757' -6"	HARSH	M184/C8	E122/38	E328/B6
MO-8401C	MOTOR OPERATOR	LIMITORQUE	SB-000, AC-CL	STEAM TUNNEL	757' -6"	HARSH	M184/C3	E122/38	E328/B6
MO-8401D	MOTOR OPERATOR	LIMITORQUE	SB-000, AC-CL	STEAM TUNNEL	757' -6"	HARSH	M184/F8	E122/38	E328/B6
MO-8402A	MOTOR OPERATOR	LIMITORQUE	SB-000, AC-CL	STEAM TUNNEL	757' -6"	HARSH	M184/F3	E122/38	E328/B6
MO-8402B	MOTOR OPERATOR	LIMITORQUE	SB-000, AC-CL	STEAM TUNNEL	757' -6"	HARSH	M184/C8	E122/38	E328/A6
MO-8402C	MOTOR OPERATOR	LIMITORQUE	SB-000, AC-CL	STEAM TUNNEL	757' -6"	HARSH	M184/C3	E122/38	E328/C6
MO-8402D	MOTOR OPERATOR	LIMITORQUE	SB-000, AC-CL	STEAM TUNNEL	757' -6"	HARSH	M184/F8	E122/38	E328/B6
MO-8403A	MOTOR OPERATOR	LIMITORQUE	SB-000, AC-CL	STEAM TUNNEL	757' -6"	HARSH	M184/F4	E122/38	E328/B5
MO-8403B	MOTOR OPERATOR	LIMITORQUE	SB-000, AC-CL	STEAM TUNNEL	757' -6"	HARSH	M184/C8	E122/38	E328/B4
MO-8403C	MOTOR OPERATOR	LIMITORQUE	SB-000, AC-CL	STEAM TUNNEL	757' -6"	HARSH	M184/C3	E122/38	E328/B5
MO-8403D	MOTOR OPERATOR	LIMITORQUE	SB-000, AC-CL	STEAM TUNNEL	757' -6"	HARSH	M184/F8	E122/38	E328/B5

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SYSTEM: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT.

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
PS-8404A	PRESSURE SWITCH	BARKSDALE	P1H-M85SS-V	A CRD RR/1C-145	771' -10"	HARSH	M184/G3	E122/37	M2/A5
PS-8404B	PRESSURE SWITCH	BARKSDALE	P1H-M85SS-V	A CRD RR/1C-145	771' -10"	HARSH	M184/C8	E122/37	M2/A5
PS-8404C	PRESSURE SWITCH	BARKSDALE	P1H-M85SS-V	A CRD RR/1C-145	771' -10"	HARSH	M184/F3	E122/37	M2/A5
PS-8404D	PRESSURE SWITCH	BARKSDALE	P1H-M85SS-V	A CRD RR/1C-145	771' -10"	HARSH	M184/F8	E122/37	M2/A5
1K-25A	MOTOR-OPERATED BLOWER	SIEMENS	2CH6 041-1U	A CRD RR	771' -10"	HARSH	M184/C5	E122/37	M644/B6
1K-25B	MOTOR-OPERATED BLOWER	SIEMENS	2CH6 041-1U	A CRD RR	771' -10"	HARSH	M184/C5	E122/37	M644/C6
1S-122A	HEATER	GE	47C518675	STEAM TUNNEL	757' -6"	HARSH	M184/F4	E122/39	E328/D3
1S-122B	HEATER	GE	47C518675	STEAM TUNNEL	757' -6"	HARSH	M184/B8	E122/39	E328/D3
1S-122C	HEATER	GE	47C518675	STEAM TUNNEL	757' -6"	HARSH	M184/B3	E122/39	E328/E3
1S-122D	HEATER	GE	47C518675	STEAM TUNNEL	757' -6"	HARSH	M184/E8	E122/39	E328/E3

DUANE ARNOLD EQDS SECONDARY REPORT
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SYSTEM: NUCLEAR BOILER

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
MO-4423	MOTOR OPERATOR	LIMITORQUE	SMB-OO, AC-CL	DRYWELL	757' -6"	HARSH	M114/B3	E122/2	E329/E2
MO-4424	MOTOR OPERATOR	LIMITORQUE	SMB-OO,DC-CLA	STEAM TUNNEL	757' -6"	HARSH	M114/B3	E122/5	E328/E4
SV-4412A	SOLENOID VALVE	ASCO	NP8320A183E	DRYWELL	757' -6"	HARSH	M114/F3	E122/11	E329/D3
SV-4412B	SOLENOID VALVE	ASCO	NP8323A36V	DRYWELL	757' -6"	HARSH	M114/F3	E122/11	E329/D3
SV-4412C	SOLENOID VALVE	ASCO	NP8323A36V	DRYWELL	757' -6"	HARSH	M114/G3	E122/11	E329/D3
SV-4413A	SOLENOID VALVE	ASCO	NP8320A183E	STEAM TUNNEL	757' -6"	HARSH	M114/F2	E122/11	E328/D4
SV-4413B	SOLENOID VALVE	ASCO	NP8323A36V	STEAM TUNNEL	757' -6"	HARSH	M114/F2	E122/11	E328/D4
SV-4413C	SOLENOID VALVE	ASCO	NP8323A36V	STEAM TUNNEL	757' -6"	HARSH	M114/F2	E122/11	E328/D4
SV-4415A	SOLENOID VALVE	ASCO	NP8320A183E	DRYWELL	757' -6"	HARSH	M114/C7	E122/11	E329/C3
SV-4415B	SOLENOID VALVE	ASCO	NP8323A36V	DRYWELL	757' -6"	HARSH	M114/C7	E122/11	E329/C3
SV-4415C	SOLENOID VALVE	ASCO	NP8323A36V	DRYWELL	757' -6"	HARSH	M114/C7	E122/11	E329/C3
SV-4416A	SOLENOID VALVE	ASCO	NP8320A183E	STEAM TUNNEL	757' -6"	HARSH	M114/C8	E122/11	E328/D4
SV-4416B	SOLENOID VALVE	ASCO	NP8323A36V	STEAM TUNNEL	757' -6"	HARSH	M114/C8	E122/11	E328/D4
SV-4416C	SOLENOID VALVE	ASCO	NP8323A36V	STEAM TUNNEL	757' -6"	HARSH	M114/C8	E122/11	E328/D4
SV-4418A	SOLENOID VALVE	ASCO	NP8320A183E	DRYWELL	757' -6"	HARSH	M114/C3	E122/11	E329/F3
SV-4418B	SOLENOID VALVE	ASCO	NP8323A36V	DRYWELL	757' -6"	HARSH	M114/C3	E122/11	E329/F3

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SYSTEM: NUCLEAR BOILER

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
SV-4418C	SOLENOID VALVE	ASCO	NP8323A36V	DRYWELL	757' -6"	HARSH	M114/C3	E122/11	E329/F3
SV-4419A	SOLENOID VALVE	ASCO	NP8320A183E	STEAM TUNNEL	757' -6"	HARSH	M114/C2	E122/11	E328/E4
SV-4419B	SOLENOID VALVE	ASCO	NP8323A36V	STEAM TUNNEL	757' -6"	HARSH	M114/C2	E122/11	E328/E4
SV-4419C	SOLENOID VALVE	ASCO	NP8323A36V	STEAM TUNNEL	757' -6"	HARSH	M114/C2	E122/11	E328/E4
SV-4420A	SOLENOID VALVE	ASCO	NP8320A183E	DRYWELL	757' -6"	HARSH	M114/E7	E122/11	E329/E3
SV-4420B	SOLENOID VALVE	ASCO	NP8323A36V	DRYWELL	757' -6"	HARSH	M114/E7	E122/11	E329/E3
SV-4420C	SOLENOID VALVE	ASCO	NP8323A36V	DRYWELL	757' -6"	HARSH	M114/E7	E122/11	E329/E3
SV-4421A	SOLENOID VALVE	ASCO	NP8320A183E	STEAM TUNNEL	757' -6"	HARSH	M114/E8	E122/11	E328/E4
SV-4421B	SOLENOID VALVE	ASCO	NP8323A36V	STEAM TUNNEL	757' -6"	HARSH	M114/E8	E122/11	E328/E4
SV-4421C	SOLENOID VALVE	ASCO	NP8323A36V	STEAM TUNNEL	757' -6"	HARSH	M114/E8	E122/11	E328/E4

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SYSTEM: POST-ACCIDENT SAMPLING

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
SV-4594A	SOLENOID VALVE	TARGET ROCK	81K-003	RB-N	757' -6"	HARSH	M115/C3	E112/	M405-2/E
SV-4594B	SOLENOID VALVE	TARGET ROCK	81K-003	RB-N	757' -6"	HARSH	M115/C3	E112/	M405-2/F
SV-8772A	SOLENOID VALVE	TARGET ROCK	81K002	TORUS ROOM NORTH	716' -9"	HARSH	M187/E1	E112/19	E316/D8
SV-8772B	SOLENOID VALVE	TARGET ROCK	81K002	TORUS ROOM NORTH	716' -9"	HARSH	M187/E1	E112/19	E316/D8

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SYSTEM: RADWASTE SUMP

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
SV-3704	SOLENOID VALVE	ASCO	NP831665E	TORUS ROOM SOUTH	716' -9"	HARSH	M137/G7	E122/9	E317/F3
SV-3705	SOLENOID VALVE	ASCO	NP831665E	TORUS ROOM SOUTH	716' -9"	HARSH	M137/G7	E122/9	E317/F3
SV-3728	SOLENOID VALVE	ASCO	NP831665E	TORUS ROOM NORTH	716' -9"	HARSH	M137/D6	E122/9	E316/D7
SV-3729	SOLENOID VALVE	ASCO	NP831665E	TORUS ROOM NORTH	716' -9"	HARSH	M137/D6	E122/9	E316/D7

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SYSTEM: REACTOR BUILDING COOLING WATER

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
MO-4841A	MOTOR OPERATOR	LIMITORQUE	SMB-000, AC-C	TORUS ROOM NORTH	716' -9"	HARSH	M112/E3	E111/17	E316/E5
MO-4841B	MOTOR OPERATOR	LIMITORQUE	SMB-000, AC-C	TORUS ROOM NORTH	716' -9"	HARSH	M112/F3	E111/17	E316/E5

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SYSTEM: REACTOR CORE ISOLATION COOLING

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
MO-2400	MOTOR OPERATOR	LIMITORQUE	SMB-OO, AC-CL	DRYWELL	775' -11"	HARSH	M124/H7	E121/29	E330/E3
MO-2401	MOTOR OPERATOR	LIMITORQUE	SMB-OO,DC-CLA	STEAM TUNNEL	757' -6"	HARSH	M124/G6	E121/30	E328/E4
MO-2512	MOTOR OPERATOR	LIMITORQUE	SMB-OO,DC-CLA	STEAM TUNNEL	757' -6"	HARSH	M125/D5	E121/40	E328/E3
MO-2516	MOTOR OPERATOR	LIMITORQUE	SMB-OOO, DC C	TORUS ROOM SOUTH	716' -9"	HARSH	M125/B5	E121/33	E317/E6
MO-2517	MOTOR OPERATOR	LIMITORQUE	SMB-OOO, DC C	RCIC ROOM	716' -9"	HARSH	M125/F4	E121/33	E317/C5

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SYSTEM: REACTOR PROTECTION

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
ZS-4412	POSITION SWITCH	NAMCO	EA-740	DRYWELL	761' -4"	HARSH	M114/E3	E122/11	M340/D3
ZS-4413	POSITION SWITCH	NAMCO	EA-740	STEAM TUNNEL	757' -6"	HARSH	M114/E2	E122/11	M268/G2
ZS-4415	POSITION SWITCH	NAMCO	EA-740	DRYWELL	761' -4"	HARSH	M114/D7	E122/11	M340/C3
ZS-4416	POSITION SWITCH	NAMCO	EA-740	STEAM TUNNEL	757' -6"	HARSH	M114/D8	E122/11	E328/D3
ZS-4418	POSITION SWITCH	NAMCO	EA-740	DRYWELL	761' -4"	HARSH	M114/D3	E122/11	M340/F3
ZS-4419	POSITION SWITCH	NAMCO	EA-740	STEAM TUNNEL	757' -6"	HARSH	M114/D2	E122/11	E328/F4
ZS-4420	POSITION SWITCH	NAMCO	EA-740	DRYWELL	761' -4"	HARSH	M114/E7	E122/11	M340/E3
ZS-4421	POSITION SWITCH	NAMCO	EA-740	STEAM TUNNEL	757' -6"	HARSH	M114/E8	E122/11	E328/E4

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SYSTEM: REACTOR RECIRCULATION

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
MO-4627	MOTOR OPERATOR WITH MOTOR BRAK	LIMITORQUE	SMB-2,AC-CLAS	DRYWELL	742' -9"	HARSH	M116/C2	E120/3	E331/F4
MO-4628	MOTOR OPERATOR WITH MOTOR BRAK	LIMITORQUE	SMB-2,AC-CLAS	DRYWELL	742' -9"	HARSH	M116/CB	E120/3	E331/C5
SV-4639	SOLENOID VALVE	ASCO	206-832-2RG	DRYWELL	775' -11"	HARSH	M116/F6	E122/10	E330/B5
SV-4640	SOLENOID VALVE	ASCO	206-832-2U	RWCU HEAT EXCH ROOM	786' -0"	HARSH	M116/F6	E122/10	E321/E5

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SYSTEM: REACTOR WATER CLEANUP

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
MO-2700	MOTOR OPERATOR	LIMITORQUE	SMB-00, AC-CL	DRYWELL	775' -11"	HARSH	M127/F8	E122/3	E330/D5
MO-2701	MOTOR OPERATOR	LIMITORQUE	SMB-00,DC-CLA	RWCU HEAT EXCH ROOM	786' -0"	HARSH	M127/F7	E122/5	E321/E6

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SYSTEM: RESIDUAL HEAT REMOVAL

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
MO-1900	MOTOR OPERATOR	LIMITORQUE	SMB-00, AC-CL	DRYWELL	805' -5"	HARSH	M119/G8	E122/2	M330/D4
MO-1902	MOTOR OPERATOR WITH MOTOR BRAK	LIMITORQUE	SMB-2, AC-CLA	RHR VALVE ROOM	757' -6"	HARSH	M119/G7	E121/48	M248/C6
MO-1903	MOTOR OPERATOR	LIMITORQUE	SMB-2, AC-CLA	TORUS ROOM SOUTH	716' -9"	HARSH	M119/G6	E121/60	M266/H8
MO-1904	MOTOR OPERATED VALVE	ELECTRODYNE	TN-24-400	RHR VALVE ROOM	757' -6"	HARSH	M119/E6	E121/53	M268/G7
MO-1905	MOTOR OPERATOR WITH MOTOR BRAK	LIMITORQUE	SMB-5, AC-CLA	RHR VALVE ROOM	757' -6"	HARSH	M119/F6	E121/52	M268/G7
MO-1908	MOTOR OPERATOR WITH MOTOR BRAK	LIMITORQUE	SMB-2, AC-CLAS	DRYWELL	775' -11"	HARSH	M119/E8	E122/56	M331/D6
MO-1909	MOTOR OPERATOR WITH MOTOR BRAK	LIMITORQUE	SMB-2, DC-CLA	RHR VALVE ROOM	757' -6"	HARSH	M119/E8	E122/4	M248/D7
MO-1912	MOTOR OPERATOR	LIMITORQUE	SMB-00, AC-CL	NW CRNR RM	716' -9"	HARSH	M119/C7	E121/44	M245/F7
MO-1913	MOTOR OPERATOR	LIMITORQUE	SMB-00, AC-CL	NW CRNR RM	716' -9"	HARSH	M119/C7	E121/43	E316/F7
MO-1920	MOTOR OPERATOR	LIMITORQUE	SMB-00, AC-CL	NW CRNR RM	716' -9"	HARSH	M119/C8	E121/44	M245/F7
MO-1921	MOTOR OPERATOR	LIMITORQUE	SMB-00, AC-CL	NW CRNR RM	732' -0"	HARSH	M119/C7	E121/43	M245/F7
MO-1932	MOTOR OPERATOR	LIMITORQUE	SMB-0, AC-CLAS	TORUS ROOM SOUTH	716' -9"	HARSH	M119/F5	E121/49	M266/G7
MO-1933	MOTOR OPERATOR	LIMITORQUE	SMB-00, AC-CL	TORUS ROOM SOUTH	716' -9"	HARSH	M119/F5	E121/59	M266/G7
MO-1934	MOTOR OPERATOR	LIMITORQUE	SMB-2, AC-CLA	TORUS ROOM SOUTH	716' -9"	HARSH	M119/F5	E121/59	M266/G7
MO-1935	MOTOR OPERATOR	LIMITORQUE	SMB-000, AC-C	TORUS ROOM NORTH	716' -9"	HARSH	M119/C5	E121/54	M256/D3
MO-1936	MOTOR OPERATOR	LIMITORQUE	SMB-00, AC-CL	TORUS ROOM NORTH	716' -9"	HARSH	M119/D6	E122/7	M246/C8

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SYSTEM: RESIDUAL HEAT REMOVAL

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
MO-1937	MOTOR OPERATOR	LIMITORQUE	SMB-000, DC C	TORUS ROOM NORTH	716' -9"	HARSH	M119/D6	E122/15	M246/8C
MO-1939	MOTOR OPERATOR	LIMITORQUE	SMB-O,AC-CLAS	NW CRNR RM	732' -0"	HARSH	M119/D4	E121/43B	M253/C7
MO-1940	MOTOR OPERATOR	LIMITORQUE	SMB-4, AC-CLA	NW CRNR RM	732' -0"	HARSH	M119/E4	E121/51	M256/C2
MO-1941	MOTOR OPERATOR	LIMITORQUE	SMB-O,AC-CLAS	NW CRNR RM	732' -0"	HARSH	M119/E3	E121/43	M253/C7
MO-1949A	MOTOR OPERATOR	LIMITORQUE	SMB-000, AC-C	NW CRNR RM	747' -6"	HARSH	M119/C4	E121/47	E316/E8
MO-1949B	MOTOR OPERATOR	LIMITORQUE	SMB-000, AC-C	NW CRNR RM	747' -6"	HARSH	M119/D4	E121/47	E316/E8
MO-1967	MOTOR OPERATOR	LIMITORQUE	SMB-000, AC-C	NW CRNR RM	732' -0"	HARSH	M119/E2	E121/50	M246/E7
MO-1970	MOTOR OPERATOR	LIMITORQUE	SMB-000, AC-C	TORUS ROOM NORTH	716' -9"	HARSH	M119/F3	E121/50	M246/E7
MO-1989	MOTOR OPERATOR	LIMITORQUE	SMB-O,AC-CLAS	TORUS ROOM NORTH	716' -9"	HARSH	M119/D7	E121/45	M245/E7
MO-2000	MOTOR OPERATOR WITH MOTOR BRAK	LIMITORQUE	SMB-2, AC-CLA	RB-S	786' -0"	HARSH	M120/G2	E121/48	M269/F6
MO-2001	MOTOR OPERATOR	LIMITORQUE	SMB-2, AC-CLA	TORUS ROOM NORTH	716' -9"	HARSH	M120/G4	E113/89	M257/D7
MO-2003	MOTOR OPERATOR WITH MOTOR BRAK	LIMITORQUE	SMB-5, AC-CLA	RHR VALVE ROOM	757' -6"	HARSH	M120/G4	E121/52	M248/D7
MO-2004	MOTOR OPERATED VALVE	ELECTRODYNE	TN-24-400	RHR VALVE ROOM	757' -6"	HARSH	M120/F4	E121/53	M248/E7
MO-2005	MOTOR OPERATOR	LIMITORQUE	SMB-O,AC-CLAS	TORUS ROOM NORTH	716' -9"	HARSH	M120/G4	E121/49	E316/D7
MO-2006	MOTOR OPERATOR	LIMITORQUE	SMB-OO, AC-CL	TORUS ROOM NORTH	716' -9"	HARSH	M120/F4	E121/59	M256/D7
MO-2007	MOTOR OPERATOR	LIMITORQUE	SMB-2, AC-CLA	TORUS ROOM NORTH	716' -9"	HARSH	M120/F5	E121/59	M256/D3

DUANE ARNOLD EQDS SECONDARY REPORT
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SYSTEM: RESIDUAL HEAT REMOVAL

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
MO-2009	MOTOR OPERATOR	LIMITORQUE	SMB-000, AC-C	TORUS ROOM SOUTH	716' -9"	HARSH	M120/C4	E121/54	M277/D5
MO-2010	MOTOR OPERATOR	LIMITORQUE	SMB-1, AC-CLA	TORUS ROOM NORTH	716' -9"	HARSH	M120/D5	E121/45	E316/C8
MO-2011	MOTOR OPERATOR	LIMITORQUE	SMB-00, AC-CL	SE CRNR RM	716' -9"	HARSH	M120/C3	E121/44	M265/F2
MO-2012	MOTOR OPERATOR	LIMITORQUE	SMB-00, AC-CL	SE CRNR RM	716' -9"	HARSH	M120/C3	E121/43	E317/E2
MO-2015	MOTOR OPERATOR	LIMITORQUE	SMB-00, AC-CL	SE CRNR RM	716' -9"	HARSH	M120/C2	E121/43	E317/E2
MO-2016	MOTOR OPERATOR	LIMITORQUE	SMB-00, AC-CL	SE CRNR RM	716' -9"	HARSH	M120/C2	E121/44	M317/E2
MO-2029	MOTOR OPERATOR	LIMITORQUE	SMB-O,AC-CLAS	SE CRNR RM	731' -4"	HARSH	M120/D5	E121/43B	M277/C3
MO-2030	MOTOR OPERATOR	LIMITORQUE	SMB-4, AC-CLA	SE CRNR RM	731' -4"	HARSH	M120/E5	E121/51	M277/C2
MO-2031	MOTOR OPERATOR	LIMITORQUE	SMB-O,AC-CLAS	SE CRNR RM	731' -4"	HARSH	M120/E7	E121/43	M277/C3
MO-2036	MOTOR OPERATOR	LIMITORQUE	SMB-000, AC-C	SE CRNR RM	731' -4"	HARSH	M120/E8	E121/50	M277/C3
MO-2038	MOTOR OPERATOR	LIMITORQUE	SMB-000, AC-C	TORUS ROOM SOUTH	716' -9"	HARSH	M120/F7	E121/50	M277/O5
MO-2044A	MOTOR OPERATOR	LIMITORQUE	SMB-000, AC-C	SE CRNR RM	747' -0"	HARSH	M120/C6	E121/47	E317/D3
MO-2044B	MOTOR OPERATOR	LIMITORQUE	SMB-000, AC-C	SE CRNR RM	747' -0"	HARSH	M120/C6	E121/47	E317/D3
MO-2069	MOTOR OPERATOR	LIMITORQUE	SMB-O,AC-CLAS	TORUS ROOM SOUTH	716' -9"	HARSH	M120/D3	E121/45	M265/F3
PDIS-1971A	FLOW INDICATING SWITCH	ITT BARTON	289	SE CRNR RM	716' -9"	HARSH	M120/F7	E121/54	E317/E3
PDIS-1971B	FLOW INDICATING SWITCH	ITT BARTON	289	NW CRNR RM	716' -9"	HARSH	M120/F7	E121/54	E316/E7

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SYSTEM: RESIDUAL HEAT REMOVAL

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME OWG/SH	LAYOUT/ LOC
PDT-1947	PRESSURE DIFFERENTIAL TRANSMIT	GE	552032HKZZ2	NW CRNR RM/1C-129B	716' -9"	HARSH	M119/C4	E121/57	M1/E7
PDT-2046	PRESSURE DIFFERENTIAL TRANSMIT	GE	552032HKZZ2	SE CRNR RM/1C-129A	716' -9"	HARSH	M120/C5	E121/58	M1/E7
SV-1963	SOLENOID VALVE	ASCO	NP8320A173E	NW CRNR RM	747' -6"	HARSH	M119/D3	E121/58	M246/E8
SV-1964	SOLENOID VALVE	ASCO	NP8320A173E	TORUS ROOM SOUTH	716' -9"	HARSH	M119/D2	E121/58	M266/D5
SV-1966	SOLENOID VALVE	ASCO	NP8320A173E	NW CRNR RM	747' -6"	HARSH	M119/E3	E121/58	M246/E7
SV-1972	SOLENOID VALVE	TARGET ROCK	72V-001	NW CRNR RM	716' -9"	HARSH	M119/D3	E122/13	E316/E7
SV-1973	SOLENOID VALVE	TARGET ROCK	72V-001	NW CRNR RM	716' -9"	HARSH	M119/D2	E122/13	E316/E7
SV-2033	SOLENOID VALVE	ASCO	NP8320A173E	SE CRNR RM	736' -6"	HARSH	M120/D7	E121/58	E317/D3
SV-2034	SOLENOID VALVE	ASCO	NP8320A173E	TORUS ROOM SDUTH	716' -9"	HARSH	M120/D7	E121/58	M266/D5
SV-2037	SOLENOID VALVE	ASCO	NP8320A173E	SE CRNR RM	731' -4"	HARSH	M120/E7	E121/58	E317/E3
SV-2051	SOLENOID VALVE	TARGET ROCK	72V-001	SE CRNR RM	716' -9"	HARSH	M120/D7	E122/13	E317/E3
SV-2052	SOLENOID VALVE	TARGET ROCK	72V-001	SE CRNR RM	716' -9"	HARSH	M120/D7	E122/13	E317/E3
1P-229A	PUMP MOTOR	GE	5K6336XC213A	SE CRNR RM	716' -9"	HARSH	M120/B3	E121/41	M1/C5
1P-229B	PUMP MOTOR	GE	5K6336XC213A	NW CRNR RM	716' -9"	HARSH	M119/B7	E121/41	M1/F7
1P-229C	PUMP MOTOR	GE	5K6336XC213A	SE CRNR RM	716' -9"	HARSH	M120/B2	E121/41	M1/C5
1P-229D	PUMP MOTOR	GE	5K6336XC213A	NW CRNR RM	716' -9"	HARSH	M119/B8	E121/41	M1/F7

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SYSTEM: RESIDUAL HEAT REMOVAL SERVICE WATER

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
MO-1942	MOTOR OPERATOR	LIMITORQUE	SMB-O,AC-CLAS	SE CRNR RM	736' -6"	HARSH	M113/F8	E121/46	M266/E3
MO-1943A	MOTOR OPERATOR	LIMITORQUE	SMB-OO, AC-CL	SE CRNR RM	736' -6"	HARSH	M113/G8	E121/45	E317/E3
MO-1943B	MOTOR OPERATOR	LIMITORQUE	SMB-OO, AC-CL	TORUS ROOM SOUTH	716' -9"	HARSH	M113/G8	E121/45	E317/F7
MO-1947	MOTOR OPERATOR	LIMITORQUE	SMB-O,AC-CLAS	NW CRNR RM	732' -0"	HARSH	M113/D7	E121/55	E316/E8
MO-2046	MOTOR OPERATOR	LIMITORQUE	SMB-O,AC-CLAS	HPCI ROOM	731' -9"	HARSH	M113/D5	E121/55	E317/D2
SV-1942	SOLENOID VALVE	TARGET ROCK	72V-002	SE CRNR RM	731' -4"	HARSH	M113/F8	E121/46	E317/E3
ZT-1947	POSITION TRANSMITTER	OHMITE	H	NW CRNR RM	732' -0"	HARSH	M113/C7	E121/58A	E316/E8
ZT-2046	POSITION TRANSMITTER	OHMITE	H	HPCI ROOM	731' -9"	HARSH	M113/C5	E121/58	M265/D2

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SYSTEM: STANDBY GAS TREATMENT

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
CU-5835A1 (	CONTROL UNIT	FENWAL	35003-0	SGT ROOM/1N3455	786'	HARSH	M158/F4	E113/97	E315/G5
SENSOR)	TEMPERATURE SENSO				-0"				
CU-5835A2 (	CONTROL UNIT	FENWAL	35003-0	SGT ROOM/1N3455	786'	HARSH	M158/F4	E113/97	E315/G5
SENSOR)	TEMPERATURE SENSO				-0"				
CU-5835B1 (	CONTROL UNIT	FENWAL	35003-0	SGT ROOM/1N4446	786'	HARSH	M158/B4	E113/97	E315/F6
SENSOR)	TEMPERATURE SENSO				-0"				
CU-5835B2 (	CONTROL UNIT	FENWAL	35003-0	SGT ROOM/1N4446	786'	HARSH	M158/B4	E113/97	E315/F6
SENSOR)	TEMPERATURE SENSO				-0"				
CU-5837A1 (	CONTROL UNIT	FENWAL	35003-0	SGT ROOM/1N3455	786'	HARSH	M158/F4	E113/97	E315/G6
SENSOR)	TEMPERATURE SENSO				-0"				
CU-5837A2 (	CONTROL UNIT	FENWAL	35003-0	SGT ROOM/1N3455	786'	HARSH	M158/F4	E113/97	E315/G6
SENSOR)	TEMPERATURE SENSO				-0"				
CU-5837B1 (	CONTROL UNIT	FENWAL	35003-0	SGT ROOM/1N4446	786'	HARSH	M158/B4	E113/97	E315/F6
SENSOR)	TEMPERATURE SENSO				-0"				
CU-5837B2 (	CONTROL UNIT	FENWAL	35003-0	SGT ROOM/1N4446	786'	HARSH	M158/B4	E113/97	E315/F6
SENSOR)	TEMPERATURE SENSO				-0"				
PS-7333A	PRESSURE SWITCH	UNITED ELECTRIC CONTROLS	J300-270	SGT ROOM	786'	HARSH	M173/B6	E113/144	E315/G6
					-0"				
PS-7333B	PRESSURE SWITCH	UNITED ELECTRIC CONTROLS	J300-270	SGT ROOM	786'	HARSH	M173/B8	E113/144	E315/F6
					-0"				
PS-7334A	PRESSURE SWITCH	UNITED ELECTRIC CONTROLS	J300-270	SGT ROOM	786'	HARSH	M173/B6	E113/144	E315/G6
					-0"				
PS-7334B	PRESSURE SWITCH	UNITED ELECTRIC CONTROLS	J300-270	SGT ROOM	786'	HARSH	M173/B8	E113/144	E315/F6
					-0"				
SV-5801A	SOLENOID VALVE	ASCO	NP831665E	SGT ROOM	786'	HARSH	M158/G7	E113/11	E315/G6
					-0"				
SV-5801B	SOLENOID VALVE	ASCO	NP831665E	SGT ROOM	786'	HARSH	M158/C7	E113/11	E315/F6
					-0"				
SV-5815A	SOLENOID VALVE	ASCO	NP831665E	SGT ROOM	786'	HARSH	M158/G3	E113/11	E315/G4
					-0"				
SV-5815B	SOLENOID VALVE	ASCO	NP831665E	SGT ROOM	786'	HARSH	M158/C3	E113/11	E315/F4
					-0"				

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SYSTEM: STANDBY GAS TREATMENT

PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
SV-5825A	SOLENOID VALVE	ASCO	NP831665E	SGT ROOM	786' -0"	HARSH	M158/E6	E113/11	E315/G6
SV-5825B	SOLENOID VALVE	ASCO	NP831665E	SGT ROOM	786' -0"	HARSH	M158/D6	E113/11	E315/F6
SV-7602A	SOLENOID VALVE	ASCO	NP831665E	SGT ROOM	786' -0"	HARSH	M176/A4	E113/64	E315/G3
SV-7602B	SOLENOID VALVE	ASCO	NP831665E	SGT ROOM	786' -0"	HARSH	M176/A4	E113/64	E315/G3
SV-7605A	SOLENOID VALVE	ASCO	NP831665E	HPCI ROOM	731' -9"	HARSH	M176/A5	E113/64	E317/B4
SV-7605B	SOLENOID VALVE	ASCO	NP831665E	HPCI ROOM	731' -9"	HARSH	M176/A5	E113/64	E317/B4
SV-8773A	SOLENOID VALVE	ASCO	NP8321A5E	NW CRNR RM	716' -9"	HARSH	M187/C3	E113/64	E316/F7
SV-8773B	SOLENOID VALVE	ASCO	NP8321A5E	NW CRNR RM	716' -9"	HARSH	M187/C2	E113/64	E316/F7
TE-5805A	TEMPERATURE SWITCH	ESSEX CONTROLS	351-34912	SGT ROOM	786' -0"	HARSH	M158/G5	E113/13	M647/G6
TE-5805B	TEMPERATURE SWITCH	ESSEX CONTROLS	351-34912	SGT ROOM	786' -0"	HARSH	M158/C5	E113/13	M647/F6
TE-5805U	TEMPERATURE ELEMENT (RTD)	GULTON INDUSTRIES	TCA-0646	SGT ROOM	786' -0"	HARSH	M158/G5	E113/113	E315/G5
TE-5805V	TEMPERATURE ELEMENT (RTD)	GULTON INDUSTRIES	TCA-0646	SGT ROOM	786' -0"	HARSH	M158/G4	E113/114	E315/G4
TE-5805W	TEMPERATURE ELEMENT (RTD)	GULTON INDUSTRIES	TCA-0646	SGT ROOM	786' -0"	HARSH	M158/C5	E113/113	E315/F5
TE-5805X	TEMPERATURE ELEMENT (RTD)	GULTON INDUSTRIES	TCA-0646	SGT ROOM	786' -0"	HARSH	M158/C4	E113/114	E315/F4
TS-5808A	TEMPERATURE SWITCH	PENN	A-19ABB-6	SGT ROOM	786' -0"	HARSH	M158/G5	E113/13	E315/G5
TS-5808B	TEMPERATURE SWITCH	PENN	A-19ABB-6	SGT ROOM	786' -0"	HARSH	M158/C5	E113/13	E315/F5

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SYSTEM: STANDBY GAS TREATMENT

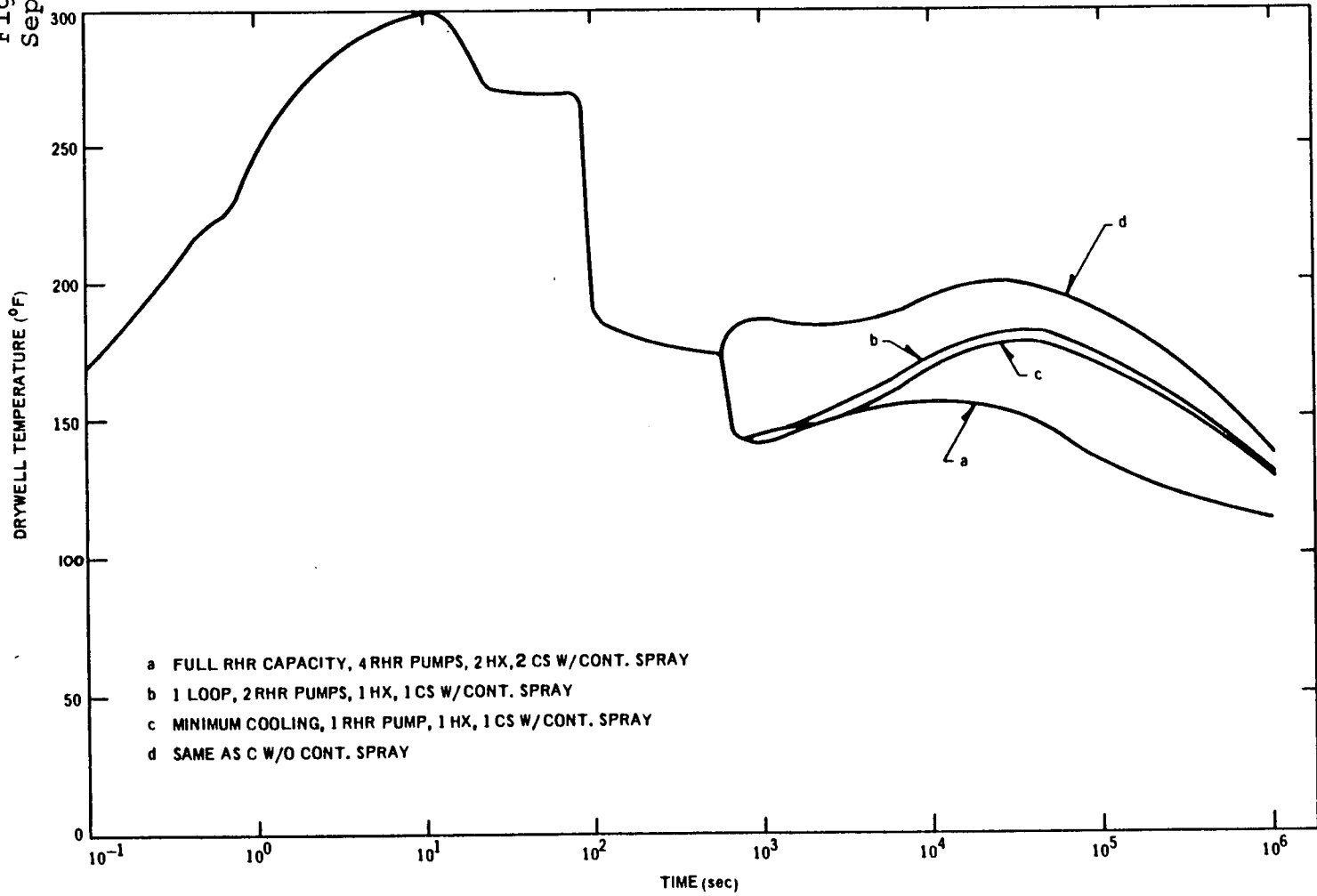
PLANT-ID	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	ELEV	ENVI- RON- MENT	P&ID/LOC	ELECT SCHEME DWG/SH	LAYOUT/ LOC
TS-5836A	TEMPERATURE SWITCH	ESSEX CONTROLS	351-253924	SGT ROOM	786' -0"	HARSH	M158/G5	E 113/13	M647/G6
TS-5836B	TEMPERATURE SWITCH	ESSEX CONTROLS	351-253924	SGT ROOM	786' -0"	HARSH	M158/C5	E 113/13	M647/F6
1S-1061A	HEATER	INDUSTRIAL ENG.& EQUIPMENT	TFZCP15900 SEE NOTE 1	SGT ROOM	786' -0"	HARSH	M158/G5	E 113/13	E315/G5
1S-1061B	HEATER	INDUSTRIAL ENG.& EQUIPMENT	TFZCP15900 SEE NOTE 1	SGT ROOM	786' -0"	HARSH	M158/C5	E 113/13	E315/F5
1V-EF-15A	FAN MOTOR	LOUIS-ALLIS COMPA	COG4B TYPE 19236S-3	SGT ROOM	786' -0"	HARSH	M158/G2	E 113/11	E315/G3
1V-EF-15B	FAN MOTOR	LOUIS-ALLIS COMPA	COG4B TYPE 19236S-3	SGT ROOM	786' -0"	HARSH	M158/C2	E 113/16	E315/F3

GENERAL NOTES

September 22, 1983

GENERAL NOTES

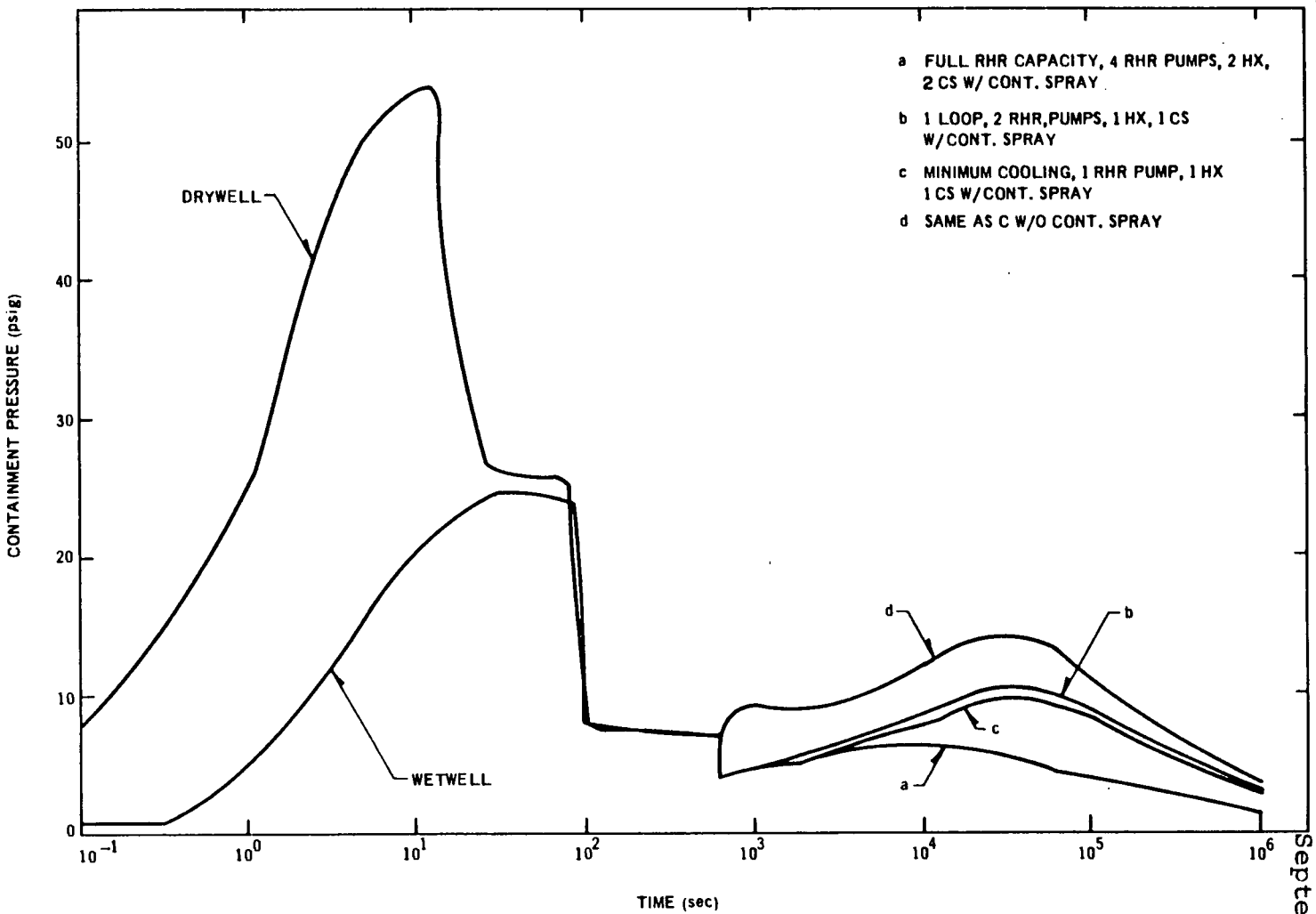
1. Deleted
2. Deleted
3. Deleted
4. This component is in an area that is harsh for radiation only. The required radiation dose specified is the maximum dose that could be received over the required operating time. In qualifying the component for this integrated radiation dose, the qualification requirements for operating time are also met.
5. Deleted
6. See attached Figures 1 and 2 for required drywell temperature and pressure conditions as a function of time. In addition, equipment located in the drywell is also required to be qualified to a peak temperature of 324F.
7. This equipment is in a location in which the pressure, temperature, and humidity conditions do not significantly change post-accident and is therefore classified as mild for these parameters. Post-accident environmental qualification for pressure, temperature, and humidity is not required.
- 8.- Deleted
- 13.



DUANE ARNOLD ENERGY CENTER
IOWA ELECTRIC LIGHT & POWER COMPANY
UPDATED FINAL SAFETY ANALYSIS REPORT

Drywell Temperature Response

Figure 6.2-46



EQUIPMENT QUALIFICATION SUMMARY SHEET CROSS-INDEX

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EQUIPMENT QUALIFICATION SUMMARY INDEX

PLANT ID	EQ EQUIP NO.	MANUFACTURER	MODEL	ENVIRONMENT
CABLE-COAX-BIW	B365-01-001	BOSTON INSULATED WIRE	RG-6A/U, 59B/U	HARSH
CABLE-COAX-RAY	R098-01-001	RAYCHEM	NA	HARSH
CABLE-COAX1-ROC	R352-02-001	ROCKBESTOS	RSS-6-104, 109\$CELLULAR DIEL	HARSH
CABLE-COAX2-ROC	R352-03-001	ROCKBESTOS	RSS-6-104\$SOLID DIELECTRIC	HARSH
CABLE-CONTROL-A/E	A385-01-002	ANACONDA ERICSON	NA	HARSH
CABLE-CONTROL-OKO	0004-02-003	OKONITE	NA	HARSH
CABLE-CONTROL-ROC	R352-01-002	ROCKBESTOS	FIREWALL III, EP	HARSH
CABLE-INSTR-A/E	A385-01-003	ANACONDA ERICSON	NA	HARSH
CABLE-INSTR-OKO	0004-02-001	OKONITE	NA	HARSH
CABLE-INSTR-ROC	R352-01-003	ROCKBESTOS	FIREWALL III, EP	HARSH
CABLE-POWER-A/E	A385-01-001	ANACONDA ERICSON	NA	HARSH
CABLE-POWER-KER	K080-01-001	KERITE	HT WITH NS JACKET	HARSH
CABLE-POWER-OKO	0004-02-002	OKONITE	NA	HARSH
CABLE-POWER-ROC	R352-01-001	ROCKBESTOS	FIREWALL III, EP	HARSH
CU-5835A1 (SENSOR)	F081-02-001	FENWAL	35003-0	HARSH
CU-5835A2 (SENSOR)	F081-02-002	FENWAL	35003-0	HARSH
CU-5835B1 (SENSOR)	F081-02-003	FENWAL	35003-0	HARSH
CU-5835B2 (SENSOR)	F081-02-004	FENWAL	35003-0	HARSH
CU-5837A1 (SENSOR)	F081-02-005	FENWAL	35003-0	HARSH
CU-5837A2 (SENSOR)	F081-02-006	FENWAL	35003-0	HARSH
CU-5837B1 (SENSOR)	F081-02-007	FENWAL	35003-0	HARSH
CU-5837B2 (SENSOR)	F081-02-008	FENWAL	35003-0	HARSH
FIS-2111	I204-04-001	ITT BARTON	289	HARSH
FIS-2131	I204-04-002	ITT BARTON	289	HARSH
FM-8408A	S223-01-001	S.K. INSTRUMENT	20-9651-8550	HARSH
FM-8408B	S223-01-002	S.K. INSTRUMENT	20-9651-8550	HARSH
FM-8408C	S223-01-003	S.K. INSTRUMENT	20-9651-8550	HARSH
FM-8408D	S223-01-004	S.K. INSTRUMENT	20-9651-8550	HARSH
FT-1971A	I204-05-008	ITT BARTON	368	HARSH
FT-1971B	I204-05-009	ITT BARTON	368	HARSH
FT-2110	G080-67-002	GE	555111BDAA-3PDF	HARSH
FT-2130	G080-67-003	GE	555111BDAA-3PDF	HARSH
INSTRUMENT CABLE	V115-02-001	VICTOREEN	878-1-9	HARSH
JX-100A	G080-90-001	GE	NS02-II\$CANNISTER TYPE	HARSH
JX-100B	G080-90-002	GE	NS02-II\$CANNISTER TYPE	HARSH
JX-100C	G080-90-003	GE	NS02-II\$CANNISTER TYPE	HARSH
JX-100D	G080-90-004	GE	NS02-II\$CANNISTER TYPE	HARSH
JX-101A	G080-88-001	GE	NS03\$CANNISTER TYPE	HARSH
JX-101B	G080-88-002	GE	NS03\$CANNISTER TYPE	HARSH
JX-103	G080-84-005	GE	NS04\$CANNISTER TYPE	HARSH
JX-104A	G080-84-001	GE	NS04\$CANNISTER TYPE	HARSH
JX-104B	G080-84-002	GE	NS04\$CANNISTER TYPE	HARSH
JX-104C	G080-84-003	GE	NS04\$CANNISTER TYPE	HARSH
JX-104D	G080-84-004	GE	NS04\$CANNISTER TYPE	HARSH
JX-105A	G080-84-006	GE	NS04\$CANNISTER TYPE	HARSH
JX-105B	G080-84-007	GE	NS04\$CANNISTER TYPE	HARSH
JX-105C	G080-84-008	GE	NS04\$CANNISTER TYPE	HARSH

EQUIPMENT QUALIFICATION SUMMARY INDEX

PLANT ID	EQ EQUIP NO.	MANUFACTURER	MODEL	ENVIRONMENT
JX-105D	G080-84-009	GE	NS04\$CANNISTER TYPE	HARSH
LT-4396A	I204-01-007	ITT BARTON	763	HARSH
LT-4396B	I204-01-008	ITT BARTON	763	HARSH
LT-4397A	I204-02-005	ITT BARTON	764	HARSH
LT-4397B	I204-02-006	ITT BARTON	764	HARSH
MO-1900	L200-16-001	LIMITORQUE	SMB-00, AC-CLASS H	HARSH
MO-1902	L200-21-001	LIMITORQUE	SMB-2, AC-CLASS B	HARSH
MO-1903	L200-20-005	LIMITORQUE	SMB-2, AC-CLASS B	HARSH
MO-1904	E153-01-001	ELECTRODYNE	TN-24-400	HARSH
MO-1905	L200-09-001	LIMITORQUE	SMB-5, AC-CLASS B	HARSH
MO-1908	L200-17-001	LIMITORQUE	SMB-2, AC-CLASS H	HARSH
MO-1909	L200-19-001	LIMITORQUE	SMB-2, DC-CLASS B	HARSH
MO-1912	L200-10-001	LIMITORQUE	SMB-00, AC-CLASS B	HARSH
MO-1913	L200-10-002	LIMITORQUE	SMB-00, AC-CLASS B	HARSH
MO-1920	L200-10-003	LIMITORQUE	SMB-00, AC-CLASS B	HARSH
MO-1921	L200-10-004	LIMITORQUE	SMB-00, AC-CLASS B	HARSH
MO-1932	L200-01-002	LIMITORQUE	SMB-0, AC-CLASS B	HARSH
MO-1933	L200-10-005	LIMITORQUE	SMB-00, AC-CLASS B	HARSH
MO-1934	L200-20-001	LIMITORQUE	SMB-2, AC-CLASS B	HARSH
MO-1935	L200-03-001	LIMITORQUE	SMB-000, AC-CLASS B	HARSH
MO-1936	L200-10-006	LIMITORQUE	SMB-00, AC-CLASS B	HARSH
MO-1937	L200-14-002	LIMITORQUE	SMB-000, DC CLASS B	HARSH
MO-1939	L200-01-003	LIMITORQUE	SMB-0, AC-CLASS B	HARSH
MO-1940	L200-08-001	LIMITORQUE	SMB-4, AC-CLASS B	HARSH
MO-1941	L200-01-004	LIMITORQUE	SMB-0, AC-CLASS B	HARSH
MO-1942	L200-01-005	LIMITORQUE	SMB-0, AC-CLASS B	HARSH
MO-1943A	L200-10-015	LIMITORQUE	SMB-00, AC-CLASS B	HARSH
MO-1943B	L200-10-016	LIMITORQUE	SMB-00, AC-CLASS B	HARSH
MO-1947	L200-01-014	LIMITORQUE	SMB-0, AC-CLASS B	HARSH
MO-1949A	L200-03-003	LIMITORQUE	SMB-000, AC-CLASS B	HARSH
MO-1949B	L200-03-004	LIMITORQUE	SMB-000, AC-CLASS B	HARSH
MO-1967	L200-03-005	LIMITORQUE	SMB-000, AC-CLASS B	HARSH
MO-1970	L200-03-006	LIMITORQUE	SMB-000, AC-CLASS B	HARSH
MO-1989	L200-01-006	LIMITORQUE	SMB-0, AC-CLASS B	HARSH
MO-2000	L200-21-003	LIMITORQUE	SMB-2, AC-CLASS B	HARSH
MO-2001	L200-06-001	LIMITORQUE	SMB-2, AC-CLASS B	HARSH
MO-2003	L200-09-002	LIMITORQUE	SMB-5, AC-CLASS B	HARSH
MO-2004	E153-01-002	ELECTRODYNE	TN-24-400	HARSH
MO-2005	L200-01-008	LIMITORQUE	SMB-0, AC-CLASS B	HARSH
MO-2006	L200-10-014	LIMITORQUE	SMB-00, AC-CLASS B	HARSH
MO-2007	L200-20-002	LIMITORQUE	SMB-2, AC-CLASS B	HARSH
MO-2009	L200-03-007	LIMITORQUE	SMB-000, AC-CLASS B	HARSH
MO-2010	L200-05-001	LIMITORQUE	SMB-1, AC-CLASS B	HARSH
MO-2011	L200-10-008	LIMITORQUE	SMB-00, AC-CLASS B	HARSH
MO-2012	L200-10-009	LIMITORQUE	SMB-00, AC-CLASS B	HARSH
MO-2015	L200-10-010	LIMITORQUE	SMB-00, AC-CLASS B	HARSH
MO-2016	L200-10-011	LIMITORQUE	SMB-00, AC-CLASS B	HARSH

EQUIPMENT QUALIFICATION SUMMARY INDEX

PLANT ID	EQ EQUIP NO.	MANUFACTURER	MODEL	ENVIRONMENT
MO-2029	L200-01-009	LIMITORQUE	SMB-0,AC-CLASS B	HARSH
MO-2030	L200-08-005	LIMITORQUE	SMB-4, AC-CLASS B	HARSH
MO-2031	L200-01-010	LIMITORQUE	SMB-0,AC-CLASS B	HARSH
MO-2036	L200-03-008	LIMITORQUE	SMB-000, AC-CLASS B	HARSH
MO-2038	L200-03-009	LIMITORQUE	SMB-000, AC-CLASS B	HARSH
MO-2044A	L200-03-012	LIMITORQUE	SMB-000, AC-CLASS B	HARSH
MO-2044B	L200-03-013	LIMITORQUE	SMB-000, AC-CLASS B	HARSH
MO-2046	L200-01-015	LIMITORQUE	SMB-0,AC-CLASS B	HARSH
MO-2069	L200-01-011	LIMITORQUE	SMB-0,AC-CLASS B	HARSH
MO-2100	L200-10-017	LIMITORQUE	SMB-00, AC-CLASS B	HARSH
MO-2104	L200-03-016	LIMITORQUE	SMB-000, AC-CLASS B	HARSH
MO-2112	L200-05-002	LIMITORQUE	SMB-1, AC-CLASS B	HARSH
MO-2115	L200-22-002	LIMITORQUE	SMB-0, AC-CLASS B	HARSH
MO-2117	L200-21-005	LIMITORQUE	SMB-2, AC-CLASS B	HARSH
MO-2120	L200-10-013	LIMITORQUE	SMB-00, AC-CLASS B	HARSH
MO-2124	L200-03-017	LIMITORQUE	SMB-000, AC-CLASS B	HARSH
MO-2132	L200-05-003	LIMITORQUE	SMB-1, AC-CLASS B	HARSH
MO-2135	L200-22-001	LIMITORQUE	SMB-0, AC-CLASS B	HARSH
MO-2137	L200-21-006	LIMITORQUE	SMB-2, AC-CLASS B	HARSH
MO-2146	L200-10-018	LIMITORQUE	SMB-00, AC-CLASS B	HARSH
MO-2147	L200-10-019	LIMITORQUE	SMB-00, AC-CLASS B	HARSH
MO-2238	L200-17-003	LIMITORQUE	SMB-2,AC-CLASS H	HARSH
MO-2239	L200-18-001	LIMITORQUE	SMB-3, DC-CLASS B	HARSH
MO-2290A	L200-03-019	LIMITORQUE	SMB-000, AC-CLASS B	HARSH
MO-2290B	L200-03-020	LIMITORQUE	SMB-000, AC-CLASS B	HARSH
MO-2312	L200-07-001	LIMITORQUE	SMB-3, DC-CLASS B	HARSH
MO-2321	L200-13-002	LIMITORQUE	SMB-00,DC-CLASS B	HARSH
MO-2400	L200-02-023	LIMITORQUE	SMB-00, AC-CLASS H	HARSH
MO-2401	L200-13-004	LIMITORQUE	SMB-00,DC-CLASS B	HARSH
MO-2512	L200-13-005	LIMITORQUE	SMB-00,DC-CLASS B	HARSH
MO-2516	L200-14-003	LIMITORQUE	SMB-000, DC CLASS B	HARSH
MO-2517	L200-14-001	LIMITORQUE	SMB-000, DC CLASS B	HARSH
MO-2700	L200-02-027	LIMITORQUE	SMB-00, AC-CLASS H	HARSH
MO-2701	L200-13-008	LIMITORQUE	SMB-00,DC-CLASS B	HARSH
MO-4320A	L200-03-023	LIMITORQUE	SMB-000, AC-CLASS B	HARSH
MO-4320B	L200-03-024	LIMITORQUE	SMB-000, AC-CLASS B	HARSH
MO-4423	L200-02-031	LIMITORQUE	SMB-00, AC-CLASS H	HARSH
MO-4424	L200-13-007	LIMITORQUE	SMB-00,DC-CLASS B	HARSH
MO-4627	L200-17-004	LIMITORQUE	SMB-2,AC-CLASS H	HARSH
MO-4628	L200-17-005	LIMITORQUE	SMB-2,AC-CLASS H	HARSH
MO-4841A	L200-03-025	LIMITORQUE	SMB-000, AC-CLASS B	HARSH
MO-4841B	L200-03-026	LIMITORQUE	SMB-000, AC-CLASS B	HARSH
MO-8401A	L200-23-001	LIMITORQUE	SB-000, AC-CLASS H	HARSH
MO-8401B	L200-23-002	LIMITORQUE	SB-000, AC-CLASS H	HARSH
MO-8401C	L200-23-003	LIMITORQUE	SB-000, AC-CLASS H	HARSH
MO-8401D	L200-23-004	LIMITORQUE	SB-000, AC-CLASS H	HARSH
MO-8402A	L200-23-005	LIMITORQUE	SB-000, AC-CLASS H	HARSH

EQUIPMENT QUALIFICATION SUMMARY INDEX

PLANT ID	EQ EQUIP NO.	MANUFACTURER	MODEL	ENVIRONMENT
MO-8402B	L200-23-006	LIMITORQUE	SB-000, AC-CLASS H	HARSH
MO-8402C	L200-23-007	LIMITORQUE	SB-000, AC-CLASS H	HARSH
MO-8402D	L200-23-008	LIMITORQUE	SB-000, AC-CLASS H	HARSH
MO-8403A	L200-23-009	LIMITORQUE	SB-000, AC-CLASS H	HARSH
MO-8403B	L200-23-010	LIMITORQUE	SB-000, AC-CLASS H	HARSH
MO-8403C	L200-23-011	LIMITORQUE	SB-000, AC-CLASS H	HARSH
MO-8403D	L200-23-012	LIMITORQUE	SB-000, AC-CLASS H	HARSH
PDIS-1971A	I204-04-004	ITT BARTON	289	HARSH
PDIS-1971B	I204-04-005	ITT BARTON	289	HARSH
PDIS-4304	I204-06-001	ITT BARTON	288A	HARSH
PDIS-4305	I204-06-002	ITT BARTON	288A	HARSH
PDT-1947	G080-48-001	GE	552032HKZZ2	HARSH
PDT-2046	G080-48-002	GE	552032HKZZ2	HARSH
PS-1917A	S382-03-001	STATIC-O-RING	5N-AA3	HARSH
PS-1917B	S382-02-001	STATIC-O-RING	12N-AA5	HARSH
PS-1925A	S382-03-002	STATIC-O-RING	5N-AA3	HARSH
PS-1925B	S382-02-002	STATIC-O-RING	12N-AA5	HARSH
PS-2023A	S382-03-003	STATIC-O-RING	5N-AA3	HARSH
PS-2023B	S382-02-003	STATIC-O-RING	12N-AA5	HARSH
PS-2024A	S382-03-004	STATIC-O-RING	5N-AA3	HARSH
PS-2024B	S382-02-012	STATIC-O-RING	12N-AA5	HARSH
PS-2107A	S382-03-006	STATIC-O-RING	5N-AA3	HARSH
PS-2107B	S382-03-007	STATIC-O-RING	5N-AA3	HARSH
PS-2127A	S382-03-008	STATIC-O-RING	5N-AA3	HARSH
PS-2127B	S382-03-009	STATIC-O-RING	5N-AA3	HARSH
PS-4348	I204-04-008	ITT BARTON	289	HARSH
PS-4400A	P381-01-001	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4400B	P381-01-002	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4400C	P381-01-003	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4401A	P381-01-004	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4401B	P381-01-005	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4401C	P381-01-006	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4402A	P381-01-007	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4402B	P381-01-008	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4402C	P381-01-009	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4403A	P381-01-010	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4403B	P381-01-011	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4403C	P381-01-012	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4404A	P381-01-013	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4404B	P381-01-014	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4404C	P381-01-015	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4405A	P381-01-016	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4405B	P381-01-017	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4405C	P381-01-018	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4406A	P381-01-019	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4406B	P381-01-020	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4406C	P381-01-021	PRESSURE CONTROLS	A-17-1N	HARSH

EQUIPMENT QUALIFICATION SUMMARY INDEX

PLANT ID	EQ EQUIP NO.	MANUFACTURER	MODEL	ENVIRONMENT
PS-4407A	P381-01-022	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4407B	P381-01-023	PRESSURE CONTROLS	A-17-1N	HARSH
PS-4407C	P381-01-024	PRESSURE CONTROLS	A-17-1N	HARSH
PS-7333A	U075-01-001	UNITED ELECTRIC\$CONTROLS	J300-270	HARSH
PS-7333B	U075-01-002	UNITED ELECTRIC\$CONTROLS	J300-270	HARSH
PS-7334A	U075-01-003	UNITED ELECTRIC\$CONTROLS	J300-270	HARSH
PS-7334B	U075-01-004	UNITED ELECTRIC\$CONTROLS	J300-270	HARSH
PS-8404A	B069-09-001	BARKSDALE	P1H-M85SS-V	HARSH
PS-8404B	B069-09-002	BARKSDALE	P1H-M85SS-V	HARSH
PS-8404C	B069-09-003	BARKSDALE	P1H-M85SS-V	HARSH
PS-8404D	B069-09-004	BARKSDALE	P1H-M85SS-V	HARSH
PT-4398A	I204-02-001	ITT BARTON	764	HARSH
PT-4398B	I204-02-002	ITT BARTON	764	HARSH
PT-8404A	G080-98-001	GE	GE 555-111DEAA4WCB	HARSH
PT-8404B	G080-98-002	GE	GE 555-111DEAA4WCB	HARSH
PT-8404C	G080-98-003	GE	GE 555-111DEAA4WCB	HARSH
PT-8404D	G080-98-004	GE	GE 555-111DEAA4WCB	HARSH
RE-9184A	V115-01-002	VICTOREEN	877-1	HARSH
RE-9184B	V115-01-004	VICTOREEN	877-1	HARSH
RE-9185A	V115-01-006	VICTOREEN	877-1	HARSH
RE-9185B	V115-01-008	VICTOREEN	877-1	HARSH
SPLICING KITS	R098-02-001	RAYCHEM	WCSF-N	HARSH
SV-1942	T020-04-001	TARGET ROCK	72V-002	HARSH
SV-1963	A499-03-003	ASCO	NP8320A173E	HARSH
SV-1964	A499-03-001	ASCO	NP8320A173E	HARSH
SV-1966	A499-03-004	ASCO	NP8320A173E	HARSH
SV-1972	T020-01-003	TARGET ROCK	72V-001	HARSH
SV-1973	T020-01-004	TARGET ROCK	72V-001	HARSH
SV-2033	A499-03-005	ASCO	NP8320A173E	HARSH
SV-2034	A499-03-002	ASCO	NP8320A173E	HARSH
SV-2037	A499-03-006	ASCO	NP8320A173E	HARSH
SV-2051	T020-01-005	TARGET ROCK	72V-001	HARSH
SV-2052	T020-01-006	TARGET ROCK	72V-001	HARSH
SV-3704	A499-01-013	ASCO	NP831665E	HARSH
SV-3705	A499-01-014	ASCO	NP831665E	HARSH
SV-3728	A499-01-015	ASCO	NP831665E	HARSH
SV-3729	A499-01-016	ASCO	NP831665E	HARSH
SV-4300X	A499-01-017	ASCO	NP831665E	HARSH
SV-4302X	A499-32-002	ASCO	NP831665E	HARSH
SV-4303	A499-32-004	ASCO	NP831665E	HARSH
SV-4304	A499-05-016	ASCO	831665	HARSH
SV-4305	A499-05-017	ASCO	831665	HARSH
SV-4306	A499-01-020	ASCO	NP831665E	HARSH
SV-4307	A499-01-021	ASCO	NP831665E	HARSH
SV-4308	A499-01-022	ASCO	NP831665E	HARSH
SV-4309	A499-01-023	ASCO	NP831665E	HARSH
SV-4310	A499-32-003	ASCO	NP831665E	HARSH

EQUIPMENT QUALIFICATION SUMMARY INDEX

PLANT ID	EQ EQUIP NO.	MANUFACTURER	MODEL	ENVIRONMENT
SV-4311	A499-01-025	ASCO	NP831665E	HARSH
SV-4312	A499-01-026	ASCO	NP831665E	HARSH
SV-4313	A499-01-027	ASCO	NP831665E	HARSH
SV-4331A	T020-06-001	TARGET ROCK	72V-004	HARSH
SV-4331B	T020-06-002	TARGET ROCK	72V-004	HARSH
SV-4332A	T020-06-003	TARGET ROCK	72V-004	HARSH
SV-4332B	T020-06-004	TARGET ROCK	72V-004	HARSH
SV-4333A	T020-06-005	TARGET ROCK	72V-004	HARSH
SV-4333B	T020-06-006	TARGET ROCK	72V-004	HARSH
SV-4334A	T020-06-007	TARGET ROCK	72V-004	HARSH
SV-4334B	T020-06-008	TARGET ROCK	72V-004	HARSH
SV-4371B	A499-32-001	ASCO	NP831665E	HARSH
SV-4400	A613-01-001	AUTOMATIC VALVE CO.	C5450-5	HARSH
SV-4402	A613-01-002	AUTOMATIC VALVE CO.	C5450-5	HARSH
SV-4405	A613-01-003	AUTOMATIC VALVE CO.	C5450-5	HARSH
SV-4406	A613-01-004	AUTOMATIC VALVE CO.	C5450-5	HARSH
SV-4412A	A499-15-003	ASCO	NP8320A183E	HARSH
SV-4412B	A499-18-009	ASCO	NP8323A36V	HARSH
SV-4412C	A499-18-001	ASCO	NP8323A36V	HARSH
SV-4413A	A499-15-004	ASCO	NP8320A183E	HARSH
SV-4413B	A499-18-010	ASCO	NP8323A36V	HARSH
SV-4413C	A499-18-002	ASCO	NP8323A36V	HARSH
SV-4415A	A499-15-005	ASCO	NP8320A183E	HARSH
SV-4415B	A499-18-011	ASCO	NP8323A36V	HARSH
SV-4415C	A499-18-003	ASCO	NP8323A36V	HARSH
SV-4416A	A499-15-006	ASCO	NP8320A183E	HARSH
SV-4416B	A499-18-012	ASCO	NP8323A36V	HARSH
SV-4416C	A499-18-004	ASCO	NP8323A36V	HARSH
SV-4418A	A499-15-007	ASCO	NP8320A183E	HARSH
SV-4418B	A499-18-013	ASCO	NP8323A36V	HARSH
SV-4418C	A499-18-005	ASCO	NP8323A36V	HARSH
SV-4419A	A499-15-008	ASCO	NP8320A183E	HARSH
SV-4419B	A499-18-014	ASCO	NP8323A36V	HARSH
SV-4419C	A499-18-006	ASCO	NP8323A36V	HARSH
SV-4420A	A499-15-009	ASCO	NP8320A183E	HARSH
SV-4420B	A499-18-015	ASCO	NP8323A36V	HARSH
SV-4420C	A499-18-007	ASCO	NP8323A36V	HARSH
SV-4421A	A499-15-010	ASCO	NP8320A183E	HARSH
SV-4421B	A499-18-016	ASCO	NP8323A36V	HARSH
SV-4421C	A499-18-008	ASCO	NP8323A36V	HARSH
SV-4594A	T020-07-001	TARGET ROCK	81K-003	HARSH
SV-4594B	T020-07-002	TARGET ROCK	81K-003	HARSH
SV-4639	A499-07-001	ASCO	206-832-2RG	HARSH
SV-4640	A499-04-002	ASCO	206-832-2U	HARSH
SV-5703A	A499-22-007	ASCO	206-832-3RU	HARSH
SV-5703B	A499-22-008	ASCO	206-832-3RU	HARSH
SV-5704A	A499-22-009	ASCO	206-832-3RU	HARSH

EQUIPMENT QUALIFICATION SUMMARY INDEX

PLANT ID	EQ EQUIP NO.	MANUFACTURER	MODEL	ENVIRONMENT
SV-5704B	A499-22-010	ASCO	206-832-3RU	HARSH
SV-5718A	A499-22-011	ASCO	206-832-3RU	HARSH
SV-5718B	A499-22-012	ASCO	206-832-3RU	HARSH
SV-5719A	A499-22-013	ASCO	206-832-3RU	HARSH
SV-5719B	A499-22-014	ASCO	206-832-3RU	HARSH
SV-5801A	A499-01-007	ASCO	NP831665E	HARSH
SV-5801B	A499-01-008	ASCO	NP831665E	HARSH
SV-5815A	A499-01-001	ASCO	NP831665E	HARSH
SV-5815B	A499-01-002	ASCO	NP831665E	HARSH
SV-5825A	A499-01-005	ASCO	NP831665E	HARSH
SV-5825B	A499-01-006	ASCO	NP831665E	HARSH
SV-7602A	A499-01-011	ASCO	NP831665E	HARSH
SV-7602B	A499-01-012	ASCO	NP831665E	HARSH
SV-7605A	A499-01-028	ASCO	NP831665E	HARSH
SV-7605B	A499-01-029	ASCO	NP831665E	HARSH
SV-8101A	T020-05-001	TARGET ROCK	72V-003	HARSH
SV-8101B	T020-05-002	TARGET ROCK	72V-003	HARSH
SV-8102A	T020-05-003	TARGET ROCK	72V-003	HARSH
SV-8102B	T020-05-004	TARGET ROCK	72V-003	HARSH
SV-8103A	T020-05-005	TARGET ROCK	72V-003	HARSH
SV-8103B	T020-05-006	TARGET ROCK	72V-003	HARSH
SV-8104A	T020-05-007	TARGET ROCK	72V-003	HARSH
SV-8104B	T020-05-008	TARGET ROCK	72V-003	HARSH
SV-8105A	T020-05-009	TARGET ROCK	72V-003	HARSH
SV-8105B	T020-05-010	TARGET ROCK	72V-003	HARSH
SV-8106A	T020-05-011	TARGET ROCK	72V-003	HARSH
SV-8106B	T020-05-012	TARGET ROCK	72V-003	HARSH
SV-8107A	T020-05-013	TARGET ROCK	72V-003	HARSH
SV-8107B	T020-05-014	TARGET ROCK	72V-003	HARSH
SV-8108A	T020-05-015	TARGET ROCK	72V-003	HARSH
SV-8108B	T020-05-016	TARGET ROCK	72V-003	HARSH
SV-8109A	T020-05-017	TARGET ROCK	72V-003	HARSH
SV-8109B	T020-05-018	TARGET ROCK	72V-003	HARSH
SV-8110A	T020-05-019	TARGET ROCK	72V-003	HARSH
SV-8110B	T020-05-020	TARGET ROCK	72V-003	HARSH
SV-8772A	T020-03-002	TARGET ROCK	81K002	HARSH
SV-8772B	T020-03-001	TARGET ROCK	81K002	HARSH
SV-8773A	A499-16-001	ASCO	NP8321A5E	HARSH
SV-8773B	A499-16-002	ASCO	NP8321A5E	HARSH
TB GRP A	A000-02-001	AMERACE CORP	NQB108	HARSH
TB GRP B	A000-02-002	AMERACE CORP	NQB108	HARSH
TE-1945C	N070-03-001	NECI	UNKNOWN	HARSH
TE-1945E	N070-03-002	NECI	UNKNOWN	HARSH
TE-2262A	N070-02-001	NECI	N145C3023	HARSH
TE-2262B	N070-02-002	NECI	N145C3023	HARSH
TE-2263A	N070-02-003	NECI	N145C3023	HARSH
TE-2263B	N070-02-004	NECI	N145C3023	HARSH

EQUIPMENT QUALIFICATION SUMMARY INDEX

PLANT ID	EQ EQUIP NO.	MANUFACTURER	MODEL	ENVIRONMENT
TE-2264A	N070-02-005	NECI	N145C3023	HARSH
TE-2264B	N070-02-006	NECI	N145C3023	HARSH
TE-2265	N070-02-035	NECI	N145C3023	HARSH
TE-2446A	N070-02-007	NECI	N145C3023	HARSH
TE-2446B	N070-02-008	NECI	N145C3023	HARSH
TE-2447A	N070-02-009	NECI	N145C3023	HARSH
TE-2447B	N070-02-010	NECI	N145C3023	HARSH
TE-2451A	N070-02-011	NECI	N145C3023	HARSH
TE-2451B	N070-02-012	NECI	N145C3023	HARSH
TE-2453	N070-02-031	NECI	N145C3023	HARSH
TE-2522A	N070-02-013	NECI	N145C3023	HARSH
TE-2522B	N070-02-014	NECI	N145C3023	HARSH
TE-2522C	N070-02-015	NECI	N145C3023	HARSH
TE-2522D	N070-02-016	NECI	N145C3023	HARSH
TE-2523A	N070-02-017	NECI	N145C3023	HARSH
TE-2523B	N070-02-018	NECI	N145C3023	HARSH
TE-2523C	N070-02-019	NECI	N145C3023	HARSH
TE-2523D	N070-02-020	NECI	N145C3023	HARSH
TE-2526A	N070-02-021	NECI	N145C3023	HARSH
TE-2526B	N070-02-022	NECI	N145C3023	HARSH
TE-2526C	N070-02-023	NECI	N145C3023	HARSH
TE-2526D	N070-02-024	NECI	N145C3023	HARSH
TE-2742A	P427-01-001	PYCO	02-9039-08-6	HARSH
TE-2742B	P427-01-002	PYCO	02-9039-08-6	HARSH
TE-2742C	P427-01-003	PYCO	02-9039-08-6	HARSH
TE-2742D	P427-01-004	PYCO	02-9039-08-6	HARSH
TE-2742E	P427-01-005	PYCO	02-9039-08-6	HARSH
TE-2742F	P427-01-006	PYCO	02-9039-08-6	HARSH
TE-2743A	P427-01-018	PYCO	02-9039-08-6	HARSH
TE-2743B	P427-01-007	PYCO	02-9039-08-6	HARSH
TE-2743C	P427-01-008	PYCO	02-9039-08-6	HARSH
TE-2743D	P427-01-009	PYCO	02-9039-08-6	HARSH
TE-2743E	P427-01-010	PYCO	02-9039-08-6	HARSH
TE-2743F	P427-01-011	PYCO	02-9039-08-6	HARSH
TE-2744A	P427-01-012	PYCO	02-9039-08-6	HARSH
TE-2744B	P427-01-013	PYCO	02-9039-08-6	HARSH
TE-2744C	P427-01-014	PYCO	02-9039-08-6	HARSH
TE-2744D	P427-01-015	PYCO	02-9039-08-6	HARSH
TE-2744E	P427-01-016	PYCO	02-9039-08-6	HARSH
TE-2744F	P427-01-017	PYCO	02-9039-08-6	HARSH
TE-4324	B572-01-001	BURNS ENGINEERING	TYPE E	HARSH
TE-4325	B572-01-002	BURNS ENGINEERING	TYPE E	HARSH
TE-4386E	L130-02-005	LEEDS & NORTHRUP	8920-404-00-3-21	HARSH
TE-4386F	L130-02-006	LEEDS & NORTHRUP	8920-404-00-3-21	HARSH
TE-4386G	L130-02-007	LEEDS & NORTHRUP	8920-404-00-3-21	HARSH
TE-4386H	L130-02-008	LEEDS & NORTHRUP	8920-404-00-3-21	HARSH
TE-4386J	L130-02-009	LEEDS & NORTHRUP	8920-404-00-3-21	HARSH

EQUIPMENT QUALIFICATION SUMMARY INDEX

PLANT ID	EQ EQUIP NO.	MANUFACTURER	MODEL	ENVIRONMENT
TE-4386K	L130-02-010	LEEDS & NORTHRUP	8920-404-00-3-21	HARSH
TE-4386L	L130-02-011	LEEDS & NORTHRUP	8920-404-00-3-21	HARSH
TE-4386M	L130-02-012	LEEDS & NORTHRUP	8920-404-00-3-21	HARSH
TE-4443A	R369-01-001	ROSEMOUNT	104MA23ABBB	HARSH
TE-4443B	R369-01-002	ROSEMOUNT	104MA23ABBB	HARSH
TE-4443C	R369-01-003	ROSEMOUNT	104MA23ABBB	HARSH
TE-4443D	R369-01-004	ROSEMOUNT	104MA23ABBB	HARSH
TE-4444A	R369-01-005	ROSEMOUNT	104MA23ABBB	HARSH
TE-4444B	R369-01-006	ROSEMOUNT	104MA23ABBB	HARSH
TE-4444C	R369-01-007	ROSEMOUNT	104MA23ABBB	HARSH
TE-4444D	R369-01-008	ROSEMOUNT	104MA23ABBB	HARSH
TE-4445A	R369-01-009	ROSEMOUNT	104MA23ABBB	HARSH
TE-4445B	R369-01-010	ROSEMOUNT	104MA23ABBB	HARSH
TE-4445C	R369-01-011	ROSEMOUNT	104MA23ABBB	HARSH
TE-4445D	R369-01-012	ROSEMOUNT	104MA23ABBB	HARSH
TE-4446A	R369-01-013	ROSEMOUNT	104MA23ABBB	HARSH
TE-4446B	R369-01-014	ROSEMOUNT	104MA23ABBB	HARSH
TE-4446C	R369-01-015	ROSEMOUNT	104MA23ABBB	HARSH
TE-4446D	R369-01-016	ROSEMOUNT	104MA23ABBB	HARSH
TE-4477A	R369-01-017	ROSEMOUNT	104MA23ABBB	HARSH
TE-4477B	R369-01-018	ROSEMOUNT	104MA23ABBB	HARSH
TE-4478A	R369-01-019	ROSEMOUNT	104MA23ABBB	HARSH
TE-4478B	R369-01-020	ROSEMOUNT	104MA23ABBB	HARSH
TE-4479A	R369-01-021	ROSEMOUNT	104MA23ABBB	HARSH
TE-4479B	R369-01-022	ROSEMOUNT	104MA23ABBB	HARSH
TE-4480A	R369-01-023	ROSEMOUNT	104MA23ABBB	HARSH
TE-4480B	R369-01-024	ROSEMOUNT	104MA23ABBB	HARSH
TE-5805A	E328-02-001	ESSEX CONTROLS	351-34912	HARSH
TE-5805B	E328-02-002	ESSEX CONTROLS	351-34912	HARSH
TE-5805U	G315-01-003	GULTON INDUSTRIES	TCA-0646	HARSH
TE-5805V	G315-01-004	GULTON INDUSTRIES	TCA-0646	HARSH
TE-5805W	G315-01-005	GULTON INDUSTRIES	TCA-0646	HARSH
TE-5805X	G315-01-006	GULTON INDUSTRIES	TCA-0646	HARSH
TS-5808A	P129-02-001	PENN	A-19ABB-6	HARSH
TS-5808B	P129-02-002	PENN	A-19ABB-6	HARSH
TS-5836A	E328-01-001	ESSEX CONTROLS	351-253924	HARSH
TS-5836B	E328-01-002	ESSEX CONTROLS	351-253924	HARSH
ZS-1972	T020-02-001	TARGET ROCK	72V001 (ZS)	HARSH
ZS-1973	T020-02-002	TARGET ROCK	72V001 (ZS)	HARSH
ZS-2051	T020-02-003	TARGET ROCK	72V001 (ZS)	HARSH
ZS-2052	T020-02-004	TARGET ROCK	72V001 (ZS)	HARSH
ZS-3704	M302-02-001	MICRO SWITCH	DTF2-2RN-RH	HARSH
ZS-3705	M302-02-002	MICRO SWITCH	DTF2-2RN-RH	HARSH
ZS-3728	M302-02-003	MICRO SWITCH	DTF2-2RN-RH	HARSH
ZS-3729	M302-02-004	MICRO SWITCH	DTF2-2RN-RH	HARSH
ZS-4304	M302-03-015	MICRO SWITCH	OPD-AR	HARSH
ZS-4305	M302-03-007	MICRO SWITCH	OPD-AR	HARSH

EQUIPMENT QUALIFICATION SUMMARY INDEX

PLANT ID	EQ EQUIP NO.	MANUFACTURER	MODEL	ENVIRONMENT
ZS-4306	M302-03-002	MICRO SWITCH	OPD-AR	HARSH
ZS-4307	M302-03-003	MICRO SWITCH	OPD-AR	HARSH
ZS-4308	M302-03-004	MICRO SWITCH	OPD-AR	HARSH
ZS-4311	M302-02-005	MICRO SWITCH	DTF2-2RN-RH	HARSH
ZS-4312	M302-02-006	MICRO SWITCH	DTF2-2RN-RH	HARSH
ZS-4313	M302-02-007	MICRO SWITCH	DTF2-2RN-RH	HARSH
ZS-4331A	T020-08-001	TARGET ROCK	72V-004 (ZS)	HARSH
ZS-4331B	T020-08-002	TARGET ROCK	72V-004 (ZS)	HARSH
ZS-4332A	T020-08-003	TARGET ROCK	72V-004 (ZS)	HARSH
ZS-4332B	T020-08-004	TARGET ROCK	72V-004 (ZS)	HARSH
ZS-4333A	T020-08-005	TARGET ROCK	72V-004 (ZS)	HARSH
ZS-4333B	T020-08-006	TARGET ROCK	72V-004 (ZS)	HARSH
ZS-4334A	T020-08-007	TARGET ROCK	72V-004 (ZS)	HARSH
ZS-4334B	T020-08-008	TARGET ROCK	72V-004 (ZS)	HARSH
ZS-4412	N007-03-001	NAMCO	EA-740	HARSH
ZS-4413	N007-03-002	NAMCO	EA-740	HARSH
ZS-4415	N007-03-003	NAMCO	EA-740	HARSH
ZS-4416	N007-03-004	NAMCO	EA-740	HARSH
ZS-4418	N007-03-005	NAMCO	EA-740	HARSH
ZS-4419	N007-03-006	NAMCO	EA-740	HARSH
ZS-4420	N007-03-007	NAMCO	EA-740	HARSH
ZS-4421	N007-03-008	NAMCO	EA-740	HARSH
ZS-4639	N007-08-001	NAMCO	EA-180	HARSH
ZS-4640	N007-05-005	NAMCO	SAI-131	HARSH
ZS-5703A	M302-02-008	MICRO SWITCH	DTF2-2RN-RH	HARSH
ZS-5703B	M302-02-009	MICRO SWITCH	DTF2-2RN-RH	HARSH
ZS-5704A	M302-02-010	MICRO SWITCH	DTF2-2RN-RH	HARSH
ZS-5704B	M302-02-011	MICRO SWITCH	DTF2-2RN-RH	HARSH
ZS-5718A	M302-02-012	MICRO SWITCH	DTF2-2RN-RH	HARSH
ZS-5718B	M302-02-013	MICRO SWITCH	DTF2-2RN-RH	HARSH
ZS-5719A	M302-02-014	MICRO SWITCH	DTF2-2RN-RH	HARSH
ZS-5719B	M302-02-015	MICRO SWITCH	DTF2-2RN-RH	HARSH
ZS-5815A	M302-03-005	MICRO SWITCH	OPD-AR	HARSH
ZS-5815B	M302-03-006	MICRO SWITCH	OPD-AR	HARSH
ZS-5825A	M302-03-018	MICRO SWITCH	OPD-AR	HARSH
ZS-5825B	M302-03-019	MICRO SWITCH	OPD-AR	HARSH
ZS-7602A	M302-03-008	MICRO SWITCH	OPD-AR	HARSH
ZS-7602B	M302-03-009	MICRO SWITCH	OPD-AR	HARSH
ZS-8773A	N007-04-001	NAMCO	EA170-41302	HARSH
ZS-8773B	N007-04-002	NAMCO	EA170-41302	HARSH
ZT-1947	0026-01-001	OHMITE	H	HARSH
ZT-2046	0026-01-002	OHMITE	H	HARSH
1K-25A	S188-01-001	SIEMENS	2CH6 041-1U	HARSH
1K-25B	S188-01-002	SIEMENS	2CH6 041-1U	HARSH
1P-211A	G080-46-001	GE	5K6336XC229A	HARSH
1P-211B	G080-46-002	GE	5K6336XC229A	HARSH
1P-229A	G080-45-001	GE	5K6336XC213A	HARSH

EQUIPMENT QUALIFICATION SUMMARY INDEX

PLANT ID	EQ EQUIP NO.	MANUFACTURER	MODEL	ENVIRONMENT
1P-229B	G080-45-002	GE	5K6336XC213A	HARSH
1P-229C	G080-45-003	GE	5K6336XC213A	HARSH
1P-229D	G080-45-004	GE	5K6336XC213A	HARSH
1S-1061A	I045-02-001	INDUSTRIAL ENG.&\$EQUIPMENT *	TFZCP15900\$SEE NOTE 1	HARSH
1S-1061B	I045-02-002	INDUSTRIAL ENG.&\$EQUIPMENT *	TFZCP15900\$SEE NOTE 1	HARSH
1S-122A	G080-42-001	GE	47C518675	HARSH
1S-122B	G080-42-002	GE	47C518675	HARSH
1S-122C	G080-42-003	GE	47C518675	HARSH
1S-122D	G080-42-004	GE	47C518675	HARSH
1V-AC-11	W120-05-001	WESTINGHOUSE	TEFC	HARSH
1V-AC-12	W120-05-002	WESTINGHOUSE	TEFC	HARSH
1V-EF-15A	L280-01-002	LOUIS-ALLIS COMPANY	COG4B\$TYPE 19236S-3E371	HARSH
1V-EF-15B	L280-01-003	LOUIS-ALLIS COMPANY	COG4B\$TYPE 19236S-3E371	HARSH

EQUIPMENT QUALIFICATION SUMMARY SHEETS

September 22, 1983

A000-02

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

Sheet No: 1
 Revision 2
 Date: 09/22/83

11186-234-NP-1

EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: TERMINAL BLOCKS Manufacturer: AMERACE CORP Model Number: NQB108 NUREG 0588 Applicable: YES Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF A,B	TYPE TEST/ ANALYSIS	NONE SEE NOTE (3)
	Temperature (°F)	SEE GEN NOTE 6		346	001		REF. A	TYPE TEST	NONE
	Pressure (PSIG)	SEE GEN NOTE 6		113	001		REF. A	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	001		REF. A	TYPE TEST	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	4.3 E07		2.0 E08	001		REF. A	TYPE TEST	NONE
	Aging	40 YEARS		25 YEARS SEE NOTE (2)	001		REF. C	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . QUALIFICATION TESTS OF TERMINAL AND FUSE BLOCKS DATED JULY 17, 1980 FOR CONTROL PRODUCTS DIV., AMERACE CORP. BY FRANKLIN RESEARCH CENTER (FRC). FRC REPORT F-C5143 (CHRON 6900) CONTROL PRODUCTS NO. CTP-NQ-51171. TEST PROFILE IS FIGURE 11, PAGE 5-14 OF THIS REPORT. B . TERMINAL BLOCK (MODEL NQB108) QUALIFICATION BY ANALYSIS	1 . SPRAY CHEMISTRY WAS 3000 PPM BORIC ACID AND BUFFERS. THIS IS MORE SEVERE THAN DEMINERALIZED WATER. 2 . TERMINAL BLOCKS LOCATED IN BOXES 1J1189, 1J1190, 1J1191, 1J1192, 2J1641, AND 2J1642 SHOULD BE REPLACED AFTER 25 YEARS. THE REMAINING TERMINAL BLOCKS ARE QUALIFIED FOR 40 YEARS.

A000-02

Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
Docket: 50-331

EQUIPMENT QUALIFICATION REPORT

Sheet No. 2
Revision: 2
Date: 09/22/83

11186-234-NP-1

DOCUMENTATION REFERENCES:	NOTES:
<p>DATED 7/29/82 (CHRON 12864). C . AGING EVALUATION FORM A000-02 REV. 1, DATED 9/21/83 (CHRON 13476).</p>	<p>3 . THIS EQUIPMENT (PLANT-ID TB GRP A) WAS REVIEWED IN FRC TER C5257-499 DATED 8/18/82 AND CLASSIFIED AS CATEGORY I.A (EQUIPMENT QUALIFIED).</p>

A000-02
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: A000-02-001

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 3
 Revision: 2
 Date: 09/22/83

11186-234-NP-1

EQ Equip No: A000-02-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS Plant I.D. Number: TB GRP A Component: TERMINAL BLOCKS Manufacturer: AMERACE CORP Model Number: NQB108 Purchase Order Number: 47134 Function/Service: SUPPORT/CABLE TERMINATIONS Accuracy: Spec: NA Location: VARIOUS Floor Elevation: VARIOUS Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	ENCOMPASSES TERMINAL
	Temperature (°F)	SEE GENERAL NOTE 6	BLOCKS INSTALLED
	Pressure (PSIG)	SEE GENERAL NOTE 6	IN 1981. TERMINAL
	Relative Humidity (%)	100	BLOCKS IN DRYWELL AT
	Chemical Spray	DEMIN WATER	165F ARE IN BOX NUMBERS
	Seismic	NA	1J1189, 1J1190 1J1191, 1J1192
	Radiation (Rad)	4.3 EO7	2J1641 AND 2J1642.
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS Plant I.D. Number: TB GRP B Component: TERMINAL BLOCKS Manufacturer: AMERACE CORP Model Number: NQB108 Purchase Order Number: 47134 Function/Service: SUPPORT/CABLE TERMINATIONS Accuracy: Spec: NA Location: VARIOUS Floor Elevation: VARIOUS Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	ENCOMPASSES TERMINAL
	Temperature (°F)	SEE GENERAL NOTE 6	BLDCKS INSTALLED
	Pressure (PSIG)	SEE GENERAL NOTE 6	IN 1983. TERMINAL
	Relative Humidity (%)	100	BLOCKS INSIDE DRYWELL AT
	Chemical Spray	DEMIN WATER	150F ARE IN BOX NUMBERS
	Seismic	NA	1J1765, 1J1766 1J1768, 2J2014
	Radiation (Rad)	4.3 EO7	AND IN STEAM TUNNEL, IN
	Aging	40 YEARS	BOX NUMBERS 1J1769 AND 1J1770.
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Loc Dwg: NA Mfr Model Ref: DCR-1010, ITEM 1.1 Environment: HARSH Elec Scheme: NA EQ Sys No: 32 P&ID: NA VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1983 Loc Dwg: NA Mfr Model Ref: DCR'S 1144, 1201, 1212, 1213, 1214, 1220 Environment: HARSH Elec Scheme: NA EQ Sys No: 32 P&ID: NA VDR ID:							

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: 600V CABLE Manufacturer: ANACONDA ERICSON Model Number: NA NUREG 0588 Applicable: YES Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A,C	TYPE TEST	NONE
	Temperature (*F)	SEE GENERAL NOTE 6		385	001		REF. A,C	TYPE TEST	NONE
	Pressure (PSIG)	SEE GENERAL NOTE 6		66	001		REF. A,C	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A,C	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	001		REF. A,C	TYPE TEST	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.6 E08		2.0 E08	001		REF. A,C	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (2)	001		REF. B,C	TYPE TEST	NONE
	Submergence	NA		NA	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . QUALIFICATION TESTS OF CLASS 1E CABLES IN A SIMULATED STEAM LINE BREAK AND LOSS OF COOLANT ACCIDENT ENVIRONMENT, FINAL REPORT F-C4969-1 FOR THE ANACONDA COMPANY, JULY 1979 (CHRON 7702). TEST PROFILE IS FIGURE 3 OF THIS REPORT. B . AGING EVALUATION FORM A385-01 REV. 1, DATED 9/9/83 (CHRON 12966).	1. TEST CABLE SAMPLE WAS CONTINUOUSLY SPRAYED AT A RATE OF AT LEAST 0.15 GPM PER SQUARE FOOT. THE CHEMICAL SOLUTION WAS 6200 PPM BORON AS BORIC ACID AND 50 PPM HYDRAZINE AND TRISODIUM PHOSPHATE AND SODIUM HYDROXIDE WERE ADDED FOR PH CONTROL. THIS IS MORE SEVERE THAN DEMINERALIZED WATER SPRAY.

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DOCUMENTATION REFERENCES:	NOTES:
<p>C . SECTION VII.K OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 112.</p>	<p>2 . QUALIFIED LIFE OF 40 YEARS ASSUMES CONTINUOUS AMBIENT TEMPERATURES OF LESS THAN 180F.</p>

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EO Equip No: A385-01-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	RAD DOSE IS FROM SGT ROOM (HIGHEST RAD DOSE AREA)
Plant I.D. Number: CABLE-POWER-A/E Component: 600V CABLE	Temperature (°F)	SEE GENERAL NOTE 6	
Manufacturer: ANACONDA ERICSON	Pressure (PSIG)	SEE GENERAL NOTE 6	
Model Number: NA	Relative Humidity (%)	100	
Purchase Order Number: 51918, 46332	Chemical Spray	DEMIN WATER	
Function/Service: SUPPORT/SUPPLY POWER TO EQUIPMENT	Seismic	NA	
Accuracy: Spec: NA Location: VARIOUS	Radiation (Rad)	1.6 EOB	
Floor Elevation: NA	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	RAD DOSE IS FROM SGT ROOM (HIGHEST RAD DOSE AREA)
Plant I.D. Number: CABLE-CONTROL-A/E Component: 600V CABLE	Temperature (°F)	SEE GENERAL NOTE 6	
Manufacturer: ANACONDA ERICSON	Pressure (PSIG)	SEE GENERAL NOTE 6	
Model Number: NA	Relative Humidity (%)	100	
Purchase Order Number: 51918, 46332	Chemical Spray	DEMIN WATER	
Function/Service: SUPPORT/SUPPLY CONTROL SIGNAL	Seismic	NA	
Accuracy: Spec: NA Location: VARIOUS	Radiation (Rad)	1.6 EOB	
Floor Elevation: NA	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981	Environment: HARSH			EQ Sys No: 32		P&ID: NA	
Loc Dwg: NA	Elec Scheme: NA			VDR ID: NONE			
Mfr Model Ref:	IE PO 51918, 46332						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981	Environment: HARSH			EQ Sys No: 32		P&ID: NA	
Loc Dwg: NA	Elec Scheme: NA			VDR ID: NONE			
Mfr Model Ref:	IE PO 51918, 46332						

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	RAD DOSE IS FROM SGT ROOM (HIGHEST RAD DOSE AREA)
Plant I.D. Number: CABLE-INSTR-A/E Component: 600V CABLE	Temperature (°F)	SEE GENERAL NOTE 6	
Manufacturer: ANACONDA ERICSON	Pressure (PSIG)	SEE GENERAL NOTE 6	
Model Number: NA	Relative Humidity (%)	100	
Purchase Order Number: 51918,46332	Chemical Spray	DEMIN WATER	
Function/Service: SUPPORT/SUPPLY INSTRUMENT SIGNAL	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	1.6 EOB	
Location: VARIOUS	Aging	40 YEARS	
Floor Elevation: NA	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (°F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:	Submergence		
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981	Environment: HARSH		EQ Sys No: 32		P&ID: NA		
Loc Dwg: NA	Elec Scheme: NA		VDR ID: NONE				
Mfr Model Ref: IE PO 51918, 46332							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins:	Environment:		EQ Sys No:		P&ID:		
Loc Dwg:	Elec Scheme:		VDR ID:				
Mfr Model Ref:							

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E NUREG 0588 Applicable: YES Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A	TYPE TEST	NONE
	Temperature (*F)	300		448	028		REF. A	TYPE TEST	NONE
	Pressure (PSIG)	1.5		66	028		REF. A	TYPE TEST	NONE
	Relative Humidity (%)	100		100	028		REF. A	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	8.1 E06		2.0 E08	028		REF. A	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	001		REF. A,B	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . ASCO TEST REPORT AQR-67368 REV. O, DATED MARCH 1982 (CHRON 7411); TEST PROFILE IS FIGURE 4.2 OF THIS REPORT. B . AGING EVALUATION FORM A499-OOE REV. 1, DATED 9/6/83 (CHRON 13269). (REFERENCES SUMMARIZED IN SECTION IX.B OF SEMIANNUAL EQ	1 . 40 YEAR QUALIFIED LIFE REQUIRES REPLACEMENT OF ETHYLENE PROPYLENE ELASTOMERS AND INSPECTION OF THE SOLENOID COIL FOR DEGRADATION EVERY 20 YEARS AND VERIFICATION OF PROPER OPERATION YEARLY.

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DOCUMENTATION REFERENCES:	NOTES:
<p>REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 5, 38, AND 39.)</p>	

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EQ Equip No: A499-01-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: SV-5815A Component: SOLENDID VALVE Manufacturer: ASCD Model Number: NP831665E Purchase Order Number: DCR-1109 Function/Service: MITIGATE RADIOACTIVE RELEASE/SGTS AIR INTAKE Accuracy: Spec: NA Location: SGT ROOM Floor Elevation: 786'-0"	Operating Time	30 DAYS	RAD DOSE BASED ON DISTANCE OF 10.5 FT. FROM SGT FILTER (CALC 221-004 REV. 2)
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.0 EO6	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: SV-5815B Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR-1109 Function/Service: MITIGATE RADIOACTIVE RELEASE/SGTS AIR INTAKE Accuracy: Spec: NA Location: SGT ROOM Floor Elevation: 786' -0"	Operating Time	30 DAYS	RAD DOSE BASED ON DISTANCE OF 10.5 FT FROM SGT FILTER (CALC 221-004 REV. 2)
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.0 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1983 Environment: HARSH EQ Sys No: 10 P&ID: M158/G3 Loc Dwg: E315/G4 Elec Scheme: E113/11 VDR ID: NONE Mfr Model Ref: DCR-1109							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1983 Environment: HARSH EQ Sys No: 10 P&ID: M158/C3 Loc Dwg: E315/F4 Elec Scheme: E113/11 VDR ID: NONE Mfr Model Ref: DCR-1109							

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EQ Equip No: A499-01-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT	Operating Time	30 DAYS	RAD DOSE BASED ON DISTANCE OF 20.5 FT FROM SGT FILTER (CALC 221-004 REV. 2)
Plant I.D. Number: SV-5825A Component:	Temperature (°F)	104	
SOLENOID VALVE	Pressure (PSIG)	0	
Manufacturer:	Relative Humidity (%)	100	
ASCO	Chemical Spray	NA	
Model Number:	Seismic	NA	
NP831665E	Radiation (Rad)	2.3 E06	
Purchase Order Number:	Aging	40 YEARS	
DCR-1109	Submergence	NA	
Function/Service: MITIGATE RADIOACTIVE RELEASE/SGTS AIR INTAKE			
Accuracy: Spec: NA Location: SGT ROOM			
Floor Elevation: 786' -0"			
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: SV-5825B Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR-1109 Function/Service: MITIGATE RADIOACTIVE RELEASE/SGTS AIR INTAKE Accuracy: Spec: NA Location: SGT ROOM Floor Elevation: 786' -0"	Operating Time	30 DAYS	RAD DOSE BASED ON DISTANCE OF 20.5 FT FROM SGT FILTER (CALC 221-004 REV. 2)
	Temperature (*F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.3 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1983 Environment: HARSH EQ Sys No: 10 P&ID: M158/E6 Loc Dwg: E315/G6 Elec Scheme: E113/11 VDR ID: NONE Mfr Model Ref: DCR-1109							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1983 Environment: HARSH EQ Sys No: 10 P&ID: M158/D6 Loc Dwg: E315/F6 Elec Scheme: E113/11 VDR ID: NONE Mfr Model Ref: DCR-1109							

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EQ Equip No: A499-01-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: SV-5801A Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR-1109 Function/Service: MITIGATE RADIOACTIVE RELEASE/SGTS COOLDOWN AIR VALVE Accuracy: Spec: NA Location: SGT ROOM Floor Elevation: 786' -0" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	RAD DOSE BASED ON OISTANCE OF 20.5 FT FROM SGT FILTER (CALC 221-004 REV. 2)
	Temperature (*F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.3 E06	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: SV-5801B Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR-1109 Function/Service: MITIGATE RADIOACTIVE RELEASE/SGTS COOLDOWN AIR VALVE Accuracy: Spec: NA Location: SGT ROOM Floor Elevation: 786' -0" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	RAD DOSE BASED ON DISTANCE OF 20.5 FT FROM SGT FILTER (CALC 221-004 REV. 2)
	Temperature (*F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.3 E06	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1983 Environment: HARSH EQ Sys No: 10 P&ID: M158/G7 Loc Dwg: E315/G6 Elec Scheme: E113/11 VDR ID: NONE Mfr Model Ref: DCR-1109							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1983 Environment: HARSH EQ Sys No: 10 P&ID: M158/C7 Loc Dwg: E315/F6 Elec Scheme: E113/11 VDR ID: NONE Mfr Model Ref: DCR-1109							

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EQ Equip No: A499-01-012

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT	Operating Time	30 DAYS	RAD DOSE BASED ON DISTANCE OF 20.5 FT FROM SGT FILTER (CALC 221-004 REV. 2)
Plant I.D. Number: SV-7602A Component: SOLENOID VALVE	Temperature (*F)	104	
Manufacturer: ASCO	Pressure (PSIG)	0	
Model Number: NP831665E	Relative Humidity (%)	100	
Purchase Order Number: DCR-1109	Chemical Spray	NA	
Function/Service: MITIGATE RADIOACTIVE RELEASE/SGTS INLET SGTS INLET	Seismic	NA	
Accuracy: Spec: NA Location: SGT ROOM	Radiation (Rad)	2.3 EO6	
Floor Elevation: 786' -0"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT	Operating Time	30 DAYS	RAD DOSE BASED ON DISTANCE OF 20.5 FT FROM SGT FILTER (CALC 221-004 REV. 2)
Plant I.D. Number: SV-7602B Component: SOLENOID VALVE	Temperature (*F)	104	
Manufacturer: ASCO	Pressure (PSIG)	0	
Model Number: NP831665E	Relative Humidity (%)	100	
Purchase Order Number: DCR-1109	Chemical Spray	NA	
Function/Service: MITIGATE RADIOACTIVE RELEASE/SGTS INLET SGTS INLET	Seismic	NA	
Accuracy: Spec: NA Location: SGT ROOM	Radiation (Rad)	2.3 EO6	
Floor Elevation: 786' -0"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1983	Environment: HARSH			EQ Sys No: 10		P&ID: M176/A4	
Loc Dwg: E315/G3	Elec Scheme: E113/64			VDR ID: NONE			
Mfgr Model Ref: DCR-1109							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1983		Environment: HARSH		EQ Sys No: 10		P&ID: M176/A4	
Loc Dwg: E315/G3		Elec Scheme: E113/64		VDR ID: NONE			
Mfgr Model Ref: DCR-1109							

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EQ Equip No: A499-01-014

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RADWASTE SUMP Plant I.D. Number: SV-3704 Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR-986 Function/Service: PRIMARY CONTAINMENT ISOLATION/DRYWELL FLOOR DRAIN SUMP ISOLATION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9"	Operating Time	1 HDUR	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.7 EO6	
	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RADWASTE SUMP Plant I.D. Number: SV-3705 Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR-986 Function/Service: PRIMARY CONTAINMENT ISOLATION/DRYWELL FLOOR DRAIN SUMP ISOLATION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9"	Operating Time	1 HOUR	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.7 EO6	
	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 39 P&ID: M137/G7 Loc Dwg: E317/F3 Elec Scheme: E122/9 VDR ID: NONE Mfr Model Ref: NG-80-1234/ATT. A--CHRON 2379							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 39 P&ID: M137/G7 Loc Dwg: E317/F3 Elec Scheme: E122/9 VDR ID: NONE Mfr Model Ref: NG-80-1234/ATT. A--CHRON 2379							

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EQ Equip No: A499-01-016

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RADWASTE SUMP Plant I.D. Number: SV-3728 Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR-986 Function/Service: PRIMARY CONTAINMENT ISOLATION/DRYWELL EQUIPMENT DRAIN SUMP ISOLATION Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716'-9"	Operating Time	1 HOUR	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.7 E06	
	Aging	40 YEARS	
	Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence		NA

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RADWASTE SUMP Plant I.D. Number: SV-3729 Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR-986 Function/Service: PRIMARY CONTAINMENT ISOLATION/DRYWELL EQUIPMENT DRAIN SUMP ISOLATION Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716' - 9"	Operating Time	1 HOUR	
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.7 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 39 P&ID: M137/D6 Loc Dwg: E316/D7 Elec Scheme: E122/9 VDR ID: NONE Mfr Model Ref: NG-80-1234/ATT. A--CHRON 2379							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 39 P&ID: M137/D6 Loc Dwg: E316/D7 Elec Scheme: E122/9 VDR ID: NONE Mfr Model Ref: NG-80-1234/ATT. A--CHRON 2379							

A499-01
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQ Equip No: A499-01-020

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-4300X Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR-918 Function/Service: PRIMARY CONTAINMENT ISOLATION/SUPPRESSION POOL PURGE OUTLET ISOLATION Accuracy: Spec: NA Location: NE CRNR RM Floor Elevation: 735' - 7"	Operating Time	30 DAYS	
	Temperature (*F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.9 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-4306 Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR-1109 Function/Service: CONTAINMENT ISOLATION /CONTAINMENT PURGE INLET ISOLATION Accuracy: Spec: NA Location: RHR VALVE ROOM Floor Elevation: 757' - 6"	Operating Time	1 HOUR	
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.5 E06	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1982 Environment: HARSH EQ Sys No: 29 P&ID: M143/D7 Loc Dwg: E316/E2 Elec Scheme: E122/12 VDR ID: NONE Mfr Model Ref: DCR-918 INDEX ITEM 59 (FCR 918-5)							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1983 Environment: HARSH EQ Sys No: 29 P&ID: M143/F1 Loc Dwg: E318/E6 Elec Scheme: E122/13 VDR ID: NONE Mfr Model Ref: DCR-1109							

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: A499-01-021

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EQ Equip No: A499-01-022

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-4307 Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR-1109 Function/Service: CONTAINMENT ISOLATION /CONTAINMENT PURGE INLET ISOLATION Accuracy: Spec: NA Location: RHR VALVE ROOM Floor Elevation: 757' -6"	Operating Time	1 HOUR	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.5 EO6	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-4308 Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR-1109 Function/Service: CONTAINMENT ISOLATION /SUPPRESSION POOL PURGE INLET ISOLATION Accuracy: Spec: NA Location: RHR VALVE ROOM Floor Elevation: 757' -6"	Operating Time	1 HOUR	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.5 EO6	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1983 Environment: HARSH EQ Sys No: 29 P&ID: M143/F2 Loc Dwg: E318/D6 Elec Scheme: E122/12 VDR ID: NONE Mfr Model Ref: DCR-1109							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1983 Environment: HARSH EQ Sys No: 29 P&ID: M143/E3 Loc Dwg: E318/D6 Elec Scheme: E122/12 VDR ID: NONE Mfr Model Ref: DCR-1109							

A499-01
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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 EQ Equip No: A499-01-023

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EQ Equip No: A499-01-025

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-4309 Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR-1109 Function/Service: PRIMARY CONTAINMENT ISOLATION/SUPPRESSION POOL PURGE OUTLET BYPASS Accuracy: Spec: NA Location: NE CRNR RM Floor Elevation: 716' -9"	Operating Time	30 DAYS	
	Temperature (*F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.9 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-4311 Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR-1109 Function/Service: CONTAINMENT ISOLATION /MAKEUP NITROGEN GAS SUPPLY INLET ISOLATION Accuracy: Spec: NA Location: RHR VALVE ROOM Floor Elevation: 757' -6"	Operating Time	1 HOUR	
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.5 E06	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1983 Environment: HARSH EQ Sys No: 29 P&ID: M143/C7 Loc Dwg: E316/E2 Elec Scheme: E122/12 VDR ID: NONE Mfr Model Ref: DCR-1109							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1983 Environment: HARSH EQ Sys No: 29 P&ID: M143/F3 Loc Dwg: E318/D6 Elec Scheme: E122/13 VDR ID: NONE Mfr Model Ref: DCR-1109							

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Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

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EQ Equip No: A499-01-027

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-4312 Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR-1109 Function/Service: CONTAINMENT ISOLATION /CONTAINMENT NITRO- GEN SUPPLY ISOLATION Accuracy: Spec: NA Location: RHR VALVE ROOM Floor Elevation: 757' -6"	Operating Time	1 HOUR	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.5 E06	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-4313 Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR-1109 Function/Service: CONTAINMENT ISOLATION SUPPRESSION POOL NITROGEN SUPPLY ISOLATION Accuracy: Spec: NA Location: RHR VALVE ROOM Floor Elevation: 757' -6"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.5 E06	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1983 Environment: HARSH EQ Sys No: 29 P&ID: M143/F3 Loc Dwg: E318/D6 Elec Scheme: E122/12 VDR ID: NONE Mfr Model Ref: DCR-1109							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1983 Environment: HARSH EQ Sys No: 29 P&ID: M143/F3 Loc Dwg: E318/D6 Elec Scheme: E122/12 VDR ID: NONE Mfr Model Ref: DCR-1109							

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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EQ Equip No: A499-01-029

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: SV-7605A Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR-986 Function/Service: MITIGATE RADIOACTIVE RELEASE/REACTOR BUILDING VENT ISOLATION Accuracy: Spec: NA Location: HPCI ROOM Floor Elevation: 731'-9" Flood Level Elevation: 717'-2" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (°F)	300	
	Pressure (PSIG)	1.5	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.1 E06	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: SV-7605B Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR-986 Function/Service: MITIGATE RADIOACTIVE RELEASE/REACTOR BUILDING VENT ISOLATION Accuracy: Spec: NA Location: HPCI ROOM Floor Elevation: 731'-9"	Operating Time	30 DAYS	
	Temperature (*F)	300	
	Pressure (PSIG)	1.5	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.1 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 717'-2" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 10 P&ID: M176/A5 Loc Dwg: E317/B4 Elec Scheme: E113/64 VDR ID: NONE Mfr Model Ref: NG-80-1234/ATT. A--CHRON 2379							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 10 P&ID: M176/A5 Loc Dwg: E317/B4 Elec Scheme: E113/64 VDR ID: NONE Mfr Model Ref: NG-80-1234/ATT. A--CHRON 2379							

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP8320A173E NUREG 0588 Applicable: YES Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A	TYPE TEST	NONE
	Temperature (*F)	277		346	001		REF. A	TYPE TEST	NONE
	Pressure (PSIG)	1.2		110	001		REF. A	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.3 E07		2.0 E08	001		REF. A	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	001		REF. B	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . ASCO TEST REPORT NO. AQS21678/TR REVISION A, JULY 1979 (CHRON 7318). TEST PROFILE IS FIGURE 2 OF THIS REPORT. B . AGING EVALUATION FORM A499-OOE REV. 1, DATED 9/6/83 (CHRON 13269). (REFERENCES SUMMARIZED IN SECTION IX.B OF SEMIANNUAL EQ	1 . 40 YEAR QUALIFIED LIFE REQUIRES REPLACEMENT OF THE ETHYLENE PROPYLENE ELASTOMERS AND INSPECTION OF THE SOLENOID COIL FOR DEGRADATION AFTER 20 YEARS AND VERIFICATION OF PROPER OPERATION YEARLY.

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Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
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DOCUMENTATION REFERENCES:	NOTES:
<p>REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 30.)</p>	

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Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

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EQ Equip No: A499-03-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	
Plant I.D. Number: SV-1964 Component: SOLENOID VALVE	Temperature (°F)	277	
Manufacturer: ASCO	Pressure (PSIG)	1.2	
Model Number: NP8320A173E	Relative Humidity (%)	100	
Purchase Order Number: DCR-986	Chemical Spray	NA	
Function/Service: REACTOR CORE COOLING/ ISOLATION OF HPCI STEAM FLOW TO THE RHR HEAT EXCHANGER	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	1.3 E07	
Location: TORUS ROOM SOUTH	Aging	40 YEARS	
Floor Elevation: 716' - 9"			
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	
Plant I.D. Number: SV-2034 Component: SOLENOID VALVE	Temperature (°F)	277	
Manufacturer: ASCO	Pressure (PSIG)	1.2	
Model Number: NP8320A173E	Relative Humidity (%)	100	
Purchase Order Number: DCR-986	Chemical Spray	NA	
Function/Service: REACTOR CORE COOLING/ ISOLATION OF HPCI STEAM FLOW TO THE RHR HEAT EXCHANGER	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	1.3 E07	
Location: TORUS ROOM SOUTH	Aging	40 YEARS	
Floor Elevation: 716' - 9"			
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins:	Environment:		EQ Sys No:		P&ID:		
1981	HARSH		09		M119/D2		
Loc Dwg: M266/D5	Elec Scheme:		E 121/58		VDR IO: NONE		
Mfr Model Ref:	NG-80-1234/ATT. A--CHRON 2379						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981	Environment: HARSH		EQ Sys No: 09		P&ID: M120/D7		
Loc Dwg: M266/D5	Elec Scheme: E121/58		VDR ID: NONE				
Mfr Model Ref:	NG-80-1234/ATT. A-- CHRON 2379						

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EQ Equip No: A499-03-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	1 HOUR	THIS VALVE IS USED IN STEAM CONDENSING MODE AND HAS NO LONG TERM SAFETY FUNCTION DURING A DBA LOCA
Plant I.D. Number: SV-1963 Component: SOLENOID VALVE	Temperature (°F)	140	
Manufacturer: ASCO	Pressure (PSIG)	0	
Model Number: NP8320A173E	Relative Humidity (%)	100	
Purchase Order Number: DCR-1109	Chemical Spray	NA	
Function/Service: REACTOR CORE COOLING /ISOLATION OF HPCI STEAM FLOW TO THE RHR HEAT EXCHANGER	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	9.6 E05	
Location: NW CRNR RM	Aging	40 YEARS	
Floor Elevation: 747' -6"			
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	
Plant I.D. Number: SV-1966 Component: SOLENOID VALVE	Temperature (°F)	140	
Manufacturer: ASCO	Pressure (PSIG)	0	
Model Number: NP8320A173E	Relative Humidity (%)	100	
Purchase Order Number: DCR-1109	Chemical Spray	NA	
Function/Service: REACTOR CORE COOLING /RHR TRAIN B CONDENSATE RETURN TO RCIC OR RHR TEST ISOLATION	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	5.9 E06	
Location: NW CRNR RM	Aging	40 YEARS	
Floor Elevation: 747' -6"			
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins:	Environment:		EQ Sys No:		P&ID:		
1983	HARSH		09		M119/D3		
Loc Dwg: M246/E8	Elec Scheme: E121/58		VDR ID: NONE				
Mfgr Model Ref:	V. P. 7884-M147-1-3						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1983		Environment: HARSH		EQ Sys No: 09		P&ID: M119/E3	
Loc Dwg: M246/E7		Elec Scheme: E121/58		VDR ID: NONE			
Mfr Model Ref: V.P. 7884-M147-1-3							

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Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

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EO Equip No: A499-03-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: SV-2033 Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP8320A173E Purchase Order Number: DCR-1109 Function/Service: REACTOR CORE COOLING /ISOLATION OF HPCI STEAM FLOW TO THE RHR HEAT EXCHANGER Accuracy: Spec: NA Location: SE CRNR RM Floor Elevation: 736'-6"	Operating Time	1 HOUR	THIS VALVE IS USED IN STEAM CONDENSING MODE AND HAS NO LONG TERM SAFETY FUNC- TION DURING A DBA LOCA
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.6 E05	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: SV-2037 Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP8320A173E Purchase Order Number: DCR-1109 Function/Service: REACTOR CORE COOLING /RHR TRAIN A CONDENSATE RETURN TO RCIC OR RHR TEST ISOLATION Accuracy: Spec: NA Location: SE CRNR RM Floor Elevation: 731'-4"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1983 Environment: HARSH EQ Sys No: 09 P&ID: M120/D7 Loc Dwg: E317/D3 Elec Scheme: E121/58 VDR ID: NONE Mfr Model Ref: DATA SHEET 7884-M452-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1983 Environment: HARSH EQ Sys No: 09 P&ID: M120/E7 Loc Dwg: E317/E3 Elec Scheme: E121/58 VDR ID: NONE Mfr Model Ref: DATA SHEET 7884-M452-5							

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Owner: IOWA ELECTRIC
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SOLENOID VALVE Manufacturer: ASCO Model Number: 206-832-2U NUREG 0588 Applicable: YES Accuracy: Demo: NA	Operating Time	1 HOUR		SEE GEN NOTE 4	002		---	---	NONE
	Temperature (*F)	122		SEE GEN NOTE 7	002		---	---	NONE
	Pressure (PSIG)	0		SEE GEN NOTE 7	002		---	---	NONE
	Relative Humidity (%)	100		SEE GEN NOTE 7	002		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.1 E06		2.8 E08	002		REF. (A)	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	002		REF. (B)	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A. ASCO TEST REPORT NO. AQS21678/TR REV A JULY 1979, (CHRON 7318). TEST PROFILE IS FIGURE 2 OF THIS REPORT. B. AGING EVALUATION FORM A499-OOE REV. 1, DATED 9/6/83 (CHRON 13269).	1. 40 YEAR QUALIFIED LIFE REQUIRES REPLACEMENT OF ETHYLENE PROPYLENE ELASTOMERS AND INSPECTION OF SOLENOID COILS FOR DEGRADATION AFTER 20 YEARS AND VERIFICATION OF PROPER OPERATION YEARLY.

A499-04
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: A499-04-002

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR RECIRCULATION	Operating Time	1 HOUR	TEMPERATURE BASED ON CALC 234-N-036.
Plant I.D. Number: SV-4640 Component: SOLENOID VALVE	Temperature (*F)	122	
Manufacturer: ASCO	Pressure (PSIG)	0	
Model Number: 206-832-2U	Relative Humidity (%)	100	
Purchase Order Number: DCR-1109	Chemical Spray	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RECIRC WATER SAMPLE LINE ISOLATION	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	1.1 EO6	
Location: RWCU HEAT EXCH ROOM	Aging	40 YEARS	
Floor Elevation: 786'-0"			
Flood Level Elevation: 786'-7" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (*F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:			
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:	Submergence		

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1983	Environment: HARSH	EQ Sys No: 40	P&ID: M116/F6				
Loc Dwg: E321/E5	Elec Scheme: E122/10	VDR ID: NONE					
Mfr Model Ref: V.P. M123-8-1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins:	Environment:	EQ Sys No:	P&ID:				
Loc Dwg:	Elec Scheme:	VDR ID:					
Mfr Model Ref:							

A499-05

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SOLENOID VALVE Manufacturer: ASCO Model Number: 831665 NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GEN NOTE 4	001		---	---	NONE
	Temperature (*F)	150		SEE GEN NOTE 7	001		---	---	NONE
	Pressure (PSIG)	0		SEE GEN NOTE 7	001		---	---	NONE
	Relative Humidity (%)	100		SEE GEN NOTE 7	001		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	2.9 E05		2.0 E08	001		REF. A	ANALYSIS	NONE
	Aging	40 YEARS		10 YEARS SEE NOTE (1)	001		REF. A	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . AGING EVALUATION FORM A499-05 REV 0, DATED 8/4/83 (CHRON 12802).	1 . REPLACE SOLENOID VALVES WITH ASCO MODEL NP831665E DURING DR BEFORE THE CYCLE 8 REFUELING OUTAGE.

A499-05

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: A499-05-016

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EQ Equip No: A499-05-017

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-4304 Component: SOLENOID VALVE Manufacturer: ASCO Model Number: 831665 Purchase Order Number: M-144D Function/Service: PRIMARY CONTAINMENT ISOLATION/SUPPRESSION POOL VACUUM BREAKER ISOLATION Accuracy: Spec: NA Location: NE CRNR RM Floor Elevation: 716' -9"	Operating Time	30 DAYS	VACUUM BRKR FUNCTION
	Temperature (*F)	104	NEEDED
	Pressure (PSIG)	0	FOR DB LOCA
	Relative Humidity (%)	100	PER UPDATED FSAR SECTION
	Chemical Spray	NA	6.2.1.1.2.5
	Seismic	NA	
	Radiation (Rad)	2.9 E05	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-4305 Component: SOLENOID VALVE Manufacturer: ASCO Model Number: 831665 Purchase Order Number: M-144D Function/Service: PRIMARY CONTAINMENT ISOLATION/SUPPRESSION POOL VACUUM BREAKER ISOLATION Accuracy: Spec: NA Location: NE CRNR RM Floor Elevation: 716' -9"	Operating Time	30 DAYS	VACUUM BRKR FUNCTION
	Temperature (*F)	104	NEEDED
	Pressure (PSIG)	0	FOR DB LOCA
	Relative Humidity (%)	100	PER UPDATED FSAR SECTION
	Chemical Spray	NA	6.2.1.1.2.5
	Seismic	NA	
	Radiation (Rad)	2.9 E05	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M143/B7 Loc Dwg: E316/F3 Elec Scheme: E122/23 VDR ID: NONE Mfr Model Ref: V.P. 7884-M144D-51-2							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M143/B7 Loc Dwg: E316/F3 Elec Scheme: E122/23 VDR ID: NONE Mfr Model Ref: V.P. 7884-M144D-51-2							

A499-07

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SOLENOID VALVE Manufacturer: ASCO Model Number: 206-832-2RG NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	1 HOUR		30 DAYS	001		REF. A	TYPE TEST	NONE SEE NOTE (3)
	Temperature (°F)	SEE GEN NOTE 6		346	001		REF. A, C	TYPE TEST	NONE
	Pressure (PSIG)	SEE GEN NOTE 6		110	001		REF. A	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	001		REF. A	TYPE TEST	NONE
	Seismic	NA		---			---	---	---
	Radiation (Rad)	2.1 E07		2.0 E08	001		REF. A	TYPE TEST	NONE
	Aging	40 YEARS		2 YEARS SEE NOTE (2)	001		REF. B	ANALYSIS	SEE NOTE (2)
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . ASCO TEST REPORT NO. AQS21678/TR REVISION A, JULY 1979 (CHRON 7318). TEST PROFILE IS FIGURE 2 OF THIS REPORT. B . AGING EVALUATION FORM A499-OOE REV. 1, DATED 9/6/83 (CHRON 13269).	1 . ACTUAL SPRAY TEST USED A BORIC ACID SOLUTION WHICH IS MORE SEVERE THAN A DEMINERALIZED WATER SPRAY. 2 . QUALIFIED LIFE BASED ON HIGH LOCAL AMBIENT TEMPERATURE AT THE EQUIPMENT LOCATION. SEE ACTION ITEM 41. 3 . THIS EQUIPMENT WAS REVIEWED IN FRC TER C5257-499 DATED 8/18/82 AND CLASSIFIED AS CATEGORY I.A (EQUIPMENT

A499-07

Owner: IOWA ELECTRIC
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DOCUMENTATION REFERENCES:	NOTES:
	QUALIFIED).

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 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: A499-07-001

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR RECIRCULATION	Operating Time	1 HOUR	
Plant I.D. Number: SV-4639 Component: SOLENOID VALVE	Temperature (°F)	SEE GENERAL NOTE 6	
Manufacturer: ASCO	Pressure (PSIG)	SEE GENERAL NOTE 6	
Model Number: 206-832-2RG	Relative Humidity (%)	100	
Purchase Order Number: DCR-892	Chemical Spray	DEMIN WATER	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RECIRC WATER SAMPLE LINE ISOLATION	Seismic	NA	
Accuracy: Spec: NA Location: DRYWELL	Radiation (Rad)	2.1 EO7	
Floor Elevation: 775' - 11"	Aging	40 YEARS	
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (°F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec: Location:	Aging		
Floor Elevation:	Submergence		
Flood Level Elevation: Above Flood Level: Yes: No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1980	Environment: HARSH	EQ Sys No: 40	P&ID: M116/F6				
Loc Dwg: E330/B5	Elec Scheme: E122/10	VDR ID: NONE					
Mfgr Model Ref: V.P.M123A-8-2							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins:	Environment:	EQ Sys No:	P&ID:				
Loc Dwg:	Elec Scheme:	VDR ID:					
Mfgr Model Ref:							

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP8320A183E NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	1 HOUR		30 DAYS	003		REF. A	TYPE TEST	NONE SEE NOTE (3)
	Temperature (°F)	SEE GEN NOTE 6		346	003		REF. A	TYPE TEST	NONE
	Pressure (PSIG)	SEE GEN NOTE 6		110	003		REF. A	TYPE TEST	NONE
	Relative Humidity (%)	100		100	003		REF. A	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	003		REF. A	TYPE TEST	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	2.1 E07		2.0 E08	003		REF. A	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (2)	003		REF. B	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . ASCO TEST REPORT NO. AQS21678/TR REVISION A, JULY 1979 (CHRON 7318). TEST PROFILE IS FIGURE 2 OF THIS REPORT. B . AGING EVALUATION FORM A499-OOE REV. 1, DATED 9/6/83 (CHRON 13269).	1 . SPRAY TEST USED A BORIC ACID SOLUTION WHICH IS MORE SEVERE THAN DEMINERALIZED WATER SPRAY. 2 . 40 YEAR QUALIFIED LIFE REQUIRES REPLACEMENT OF ETHYLENE PROPYLENE ELASTOMERS AND INSPECTION OF THE SOLENOID COILS FOR DEGRADATION EVERY 4.5 YEARS. QUALIFIED LIFE ALSO REQUIRES VERIFICATION OF PROPER OPERATION YEARLY.

A499-15

Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
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DOCUMENTATION REFERENCES:	NOTES:
	<p>3 . THIS EQUIPMENT WAS REVIEWED IN FRC TER C5257-499 DATED 8/18/82 AND CLASSIFIED AS CATEGORY I.A (EQUIPMENT QUALIFIED).</p>

A499-15

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

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EQ Equip No: A499-15-003

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EQ Equip No: A499-15-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER Plant I.D. Number: SV-4412A Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP8320A183E Purchase Order Number: DCR-892 Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "A" INBOARD VALVE ISOLATION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 757'-6" Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Operating Time	1 HOUR	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER Plant I.D. Number: SV-4413A Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP8320A183E Purchase Order Number: DCR-892 Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "A" OUTBOARD VALVE ISOLATION Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757'-6" Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Operating Time	1 HOUR	
	Temperature (°F)	300	
	Pressure (PSIG)	1.8	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.4 E06	
	Aging	40 YEARS	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Loc Dwg: E329/D3 Mfr Model Ref: DCR-892 INDEX ITEM 5 Environment: HARSH EQ Sys No: 34 P&ID: M114/F3 Elec Scheme: E122/11 VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Loc Dwg: E328/D4 Mfr Model Ref: DCR-892 INDEX ITEM 5 Environment: HARSH EQ Sys No: 34 P&ID: M114/F2 Elec Scheme: E122/11 VDR ID: NONE							

A499-15

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

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EQ Equip No: A499-15-005

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EQ Equip No: A499-15-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER	Operating Time	1 HOUR	
Plant I.D. Number: SV-4415A Component: SOLENOID VALVE	Temperature (°F)	SEE GENERAL NOTE 6	
Manufacturer: ASCO	Pressure (PSIG)	SEE GENERAL NOTE 6	
Model Number: NP8320A183E	Relative Humidity (%)	100	
Purchase Order Number: DCR-892	Chemical Spray	DEMIN WATER	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "B" INBOARD VALVE ISOLATION	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	2.1 E07	
Location: DRYWELL	Aging	40 YEARS	
Floor Elevation: 757'-6"	Submergence	NA	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER	Operating Time	1 HOUR	
Plant I.D. Number: SV-4416A Component: SOLENOID VALVE	Temperature (°F)	300	
Manufacturer: ASCO	Pressure (PSIG)	1.8	
Model Number: NP8320A183E	Relative Humidity (%)	100	
Purchase Order Number: DCR-892	Chemical Spray	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "B" OUTBOARD VALVE ISOLATION	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	9.4 E06	
Location: STEAM TUNNEL	Aging	40 YEARS	
Floor Elevation: 757'-6"	Submergence	NA	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins:	Environment:		EQ Sys No:		P&ID:		
1981	HARSH		34		M114/C7		
Loc Dwg: E329/C3	Elec Scheme: E122/11		VDR ID: NONE				
Mfgr Model Ref:	DCR-892 INDEX ITEM 5						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981	Environment: HARSH			EQ Sys No: 34		P&ID: M114/C8	
Loc Dwg: E328/D4	Elec Scheme: E122/11			VDR ID: NONE			
Mfgr Model Ref:	DCR-892 INDEX ITEM 5						

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNDLD
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EQ Equip No: A499-15-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER Plant I.D. Number: SV-4418A Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP8320A183E Purchase Order Number: DCR-892 Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM INBOARD VALVE ISOLATION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 757' -6"	Operating Time	1 HOUR	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
	Flood Level Elevation: 744' -0" Above Flood Level: Yes: X No:	Submergence		NA

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER Plant I.D. Number: SV-4419A Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP8320A183E Purchase Order Number: DCR-892 Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM OUTBOARD VALVE ISOLATION Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757' - 6"	Operating Time	1 HOUR	
	Temperature (°F)	300	
	Pressure (PSIG)	1.8	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.4 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 760' - 0" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 34 P&ID: M114/C3 Loc Dwg: E329/F3 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: DCR-892 INDEX ITEM 5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 34 P&ID: M114/C2 Loc Dwg: E328/E4 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: DCR-892 INDEX ITEM 5							

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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 EQ Equip No: A499-15-009

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EQ Equip No: A499-15-010

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER	Operating Time	1 HOUR	
Plant I.D. Number: SV-4420A Component: SOLENOID VALVE	Temperature (°F)	SEE GENERAL NOTE 6	
Manufacturer: ASCO	Pressure (PSIG)	SEE GENERAL NOTE 6	
Model Number: NP8320A183E	Relative Humidity (%)	100	
Purchase Order Number: DCR-892	Chemical Spray	DEMIN WATER	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "D" INBOARD VALVE ISOLATION	Seismic	NA	
Accuracy: Spec: NA Location: DRYWELL	Radiation (Rad)	2.1 E07	
Floor Elevation: 757'-6"	Aging	40 YEARS	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER	Operating Time	1 HOUR	
Plant I.D. Number: SV-4421A Component: SOLENOID VALVE	Temperature (°F)	300	
Manufacturer: ASCO	Pressure (PSIG)	1.8	
Model Number: NP8320A183E	Relative Humidity (%)	100	
Purchase Order Number: DCR-892	Chemical Spray	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "D" OUTBOARD VALVE ISOLATION	Seismic	NA	
Accuracy: Spec: NA Location: STEAM TUNNEL	Radiation (Rad)	9.4 E06	
Floor Elevation: 757'-6"	Aging	40 YEARS	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 34 P&ID: M114/E7							
Loc Dwg: E329/E3 Elec Scheme: E122/11 VDR ID: NONE							
Mfr Model Ref: DCR-892 INDEX ITEM 5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 34 P&ID: M114/E8							
Loc Dwg: E328/E4 Elec Scheme: E122/11 VDR ID: NONE							
Mfr Model Ref: DCR-892 INDEX ITEM 5							

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP8321A5E NUREG 0588 Applicable: YES Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A	TYPE TEST	NONE
	Temperature (°F)	140		346	001		REF. A	TYPE TEST	NONE
	Pressure (PSIG)	0		110	001		REF. A	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	5.9 E06		2.0 E08	001		REF. A	TYPE TEST	NONE
	Aging	40 YEARS		SEE NOTE (1)	001		REF. B	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . ASCO TEST REPORT NO. AQS21678/TR REVISION A, JULY 1979 (CHRON 7318). TEST PROFILE IS FIGURE 2 OF THIS REPORT. B . AGING EVALUATION FORM A499-OOE REV. 1, DATED 9/6/83 (CHRON 13269). (REFERENCES SUMMARIZED IN SECTION IX.B OF SEMIANNUAL EQ	1 . 40 YEAR QUALIFIED LIFE REQUIRES REPLACEMENT OF ETHYLENE PROPYLENE ELASTOMERS AND INSPECTION OF THE SOLENOID COIL FOR DEGRADATION AFTER 20 YEARS AND VERIFICATION OF PROPER OPERATION YEARLY.

A499-16

Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
Docket: 50-331

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DOCUMENTATION REFERENCES:	NOTES:
<p>REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 27.)</p>	

A499-16
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: A499-16-001

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No: 41
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EQ Equip No: A499-16-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT	Operating Time	30 DAYS	
Plant I.D. Number: SV-8773A Component: SOLENOID VALVE	Temperature (*F)	140	
Manufacturer: ASCO	Pressure (PSIG)	0	
Model Number: NP8321A5E	Relative Humidity (%)	100	
Purchase Order Number: DCR-932A	Chemical Spray	NA	
Function/Service: POST ACCIDENT MONITORING/SAMPLE PANEL EXHAUST DUCT ISOLATION	Seismic	NA	
Accuracy: Spec: NA Location: NW CRNR RM	Radiation (Rad)	5.9 EO6	
Floor Elevation: 716'-9"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT	Operating Time	30 DAYS	
Plant I.D. Number: SV-8773B Component: SOLENOID VALVE	Temperature (*F)	140	
Manufacturer: ASCO	Pressure (PSIG)	0	
Model Number: NP8321A5E	Relative Humidity (%)	100	
Purchase Order Number: DCR-932A	Chemical Spray	NA	
Function/Service: POST ACCIDENT MONITORING/SAMPLE PANEL EXHAUST DUCT ISOLATION	Seismic	NA	
Accuracy: Spec: NA Location: NW CRNR RM	Radiation (Rad)	5.9 EO6	
Floor Elevation: 716'-9"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1983 Environment: HARSH EQ Sys No: 10 P&ID: M187/C3 Loc Dwg: E316/F7 Elec Scheme: E113/64 VDR ID: NONE Mfr Model Ref: V.P. 11186-223-44668-8-2							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1983 Environment: HARSH EQ Sys No: 10 P&ID: M187/C2 Loc Dwg: E316/F7 Elec Scheme: E113/64 VDR ID: NONE Mfr Model Ref: V.P. 11186-223-44668-8-2							

A499-18
 Owner: IDWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP8323A36V NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	1 HOUR		30 DAYS	001		REF. (A)	TYPE TEST	NONE
	Temperature (°F)	SEE GEN NOTE 6		448	001		REF. (A)	TYPE TEST	NONE
	Pressure (PSIG)	SEE GEN NOTE 6		68	001		REF. (A)	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. (A)	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	001		REF. (A)	TYPE TEST	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	2.1 E07		2.0 E08	001		REF. (A)	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (2)	001		REF. (B)	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A. ASCO TEST REPORT AQR-67368 REVISION 0, DATED 3/2/82 (CHRON 7411). TEST PROFILE IS FIGURE 4.1 OF THIS REPORT. B. AGING EVALUATION FORM A499-OOV DATED 7/8/82 (CHRON 8102). (REFERENCES SUMMARIZED IN SECTION VIII.B OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT	1. ACTUAL SPRAY TEST USED A BORIC ACID SOLUTION WHICH IS MORE SEVERE THAN DEMINERALIZED WATER SUPPLY. 2. TO ENSURE A QUALIFIED LIFE OF 40 YEARS, VITON ELASTOMERS FOR SOLENOID OPERATORS WITHIN THE DRYWELL AND STEAM TUNNEL SHOULD BE REPLACED AND THE SOLENOID COILS SHOULD BE INSPECTED FOR DEGRADATION AT 20 YEAR INTERVALS. ALL

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Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
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DOCUMENTATION REFERENCES:	NOTES:
ITEMS 47 AND 48.)	OPERATORS SHOULD BE CHECKED FOR PROPER OPERATION YEARLY.

A499-18
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: A499-18-001

EQUIPMENT QUALIFICATION REPORT DATA SHEET

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EQ Equip No: A499-18-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER	Operating Time	1 HOUR	
Plant I.D. Number: SV-4412C Component: SOLENOID VALVE	Temperature (°F)	SEE GENERAL NOTE 6	
Manufacturer: ASCO	Pressure (PSIG)	SEE GENERAL NOTE 6	
Model Number: NP8323A36V	Relative Humidity (%)	100	
Purchase Order Number: DCR-892	Chemical Spray	DEMIN WATER	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "A" INBOARD VALVE ISOLATION	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	2.1 E07	
Location: DRYWELL	Aging	40 YEARS	
Floor Elevation: 757'-6"	Submergence	NA	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BDILER	Operating Time	1 HOUR	
Plant I.D. Number: SV-4413C Component: SOLENOID VALVE	Temperature (°F)	300	
Manufacturer: ASCO	Pressure (PSIG)	1.8	
Model Number: NP8323A36V	Relative Humidity (%)	100	
Purchase Order Number: DCR-892	Chemical Spray	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "A" OUTBOARD VALVE ISOLATION	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	9.4 E06	
Location: STEAM TUNNEL	Aging	40 YEARS	
Floor Elevation: 757'-6"	Submergence	NA	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 34 P&ID: M114/G3 Loc Dwg: E329/D3 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: OCR-892 INDEX ITEM 5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 34 P&ID: M114/F2 Loc Dwg: E328/D4 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: DCR-892 INDEX ITEM 5							

A499-18
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: A499-18-003

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EQ Equip No: A499-18-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER	Operating Time	1 HOUR	
Plant I.D. Number: SV-4415C Component:	Temperature (*F)	SEE GENERAL NDTE 6	
SOLENOID VALVE	Pressure (PSIG)	SEE GENERAL NOTE 6	
Manufacturer: ASCO	Relative Humidity (%)	100	
Model Number: NP8323A36V	Chemical Spray	DEMIN WATER	
Purchase Order Number: DCR-892	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "B" INBOARD VALVE ISOLATION	Radiation (Rad)	2.1 E07	
Accuracy: Spec: NA Location: DRYWELL	Aging	40 YEARS	
Floor Elevation: 757' - 6"	Submergence	NA	
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER	Operating Time	1 HOUR	
Plant I.D. Number: SV-4416C Component:	Temperature (*F)	300	
SOLENOID VALVE	Pressure (PSIG)	1.8	
Manufacturer: ASCO	Relative Humidity (%)	100	
Model Number: NP8323A36V	Chemical Spray	NA	
Purchase Order Number: DCR-892	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "B" OUTBOARD VALVE ISOLATION	Radiation (Rad)	9.4 E06	
Accuracy: Spec: NA Location: STEAM TUNNEL	Aging	40 YEARS	
Floor Elevation: 757' - 6"	Submergence	NA	
Flood Level Elevation: 760' - 0" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 34 P&ID: M114/C7 Loc Dwg: E329/C3 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: DCR-892 INDEX ITEM 5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 34 P&ID: M114/C8 Loc Dwg: E328/D4 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: DCR-892 INDEX ITEM 5							

A499-18
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: A499-18-005

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EQ Equip No: A499-18-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER Plant I.D. Number: SV-4418C Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP8323A36V Purchase Order Number: DCR-892 Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "C" INBOARD VALVE ISOLATION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 757'-6" Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Operating Time	1 HOUR	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER Plant I.D. Number: SV-4419C Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP8323A36V Purchase Order Number: DCR-892 Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "C" OUTBOARD VALVE ISOLATION Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757'-6" Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Operating Time	1 HOUR	
	Temperature (°F)	300	
	Pressure (PSIG)	1.8	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.4 E06	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Loc Dwg: E329/F3 Mfr Model Ref: DCR-892 INDEX ITEM 5 Environment: HARSH Elec Scheme: E122/11 EQ Sys No: 34 P&ID: M114/C3 VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Loc Dwg: E328/E4 Mfr Model Ref: DCR-892 INDEX ITEM 5 Environment: HARSH Elec Scheme: E122/11 EQ Sys No: 34 P&ID: M114/C2 VDR ID: NONE							

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: A499-18-007

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EQ Equip No: A499-18-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER Plant I.D. Number: SV-4420C Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP8323A36V Purchase Order Number: DCR-892 Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "D" INBOARD VALVE ISOLATION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 757'-6" Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Operating Time	1 HOUR	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	2.1 EO7	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER Plant I.D. Number: SV-4421C Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP8323A36V Purchase Order Number: DCR-892 Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "D" OUTBOARD VALVE ISOLATION Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757'-6" Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Operating Time	1 HOUR	
	Temperature (°F)	300	
	Pressure (PSIG)	1.8	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.4 EO6	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 34 P&ID: M114/E7 Loc Dwg: E329/E3 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: DCR-892 INDEX ITEM 5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 34 P&ID: M114/E8 Loc Dwg: E328/E4 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: DCR-892 INDEX ITEM 5							

A499-18
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: A499-18-009

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EQ Equip No: A499-18-010

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER	Operating Time	1 HOUR	
Plant I.D. Number: SV-4412B Component: SOLENOID VALVE	Temperature (*F)	SEE GENERAL NOTE 6	
Manufacturer: ASCO	Pressure (PSIG)	SEE GENERAL NOTE 6	
Model Number: NP8323A36V	Relative Humidity (%)	100	
Purchase Order Number: DCR-892	Chemical Spray	DEMIN WATER	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "A" INBOARD VALVE ISOLATION	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	2.1 E07	
Location: DRYWELL	Aging	40 YEARS	
Floor Elevation: 757' - 6"			
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER	Operating Time	1 HOUR	
Plant I.D. Number: SV-4413B Component: SOLENOID VALVE	Temperature (*F)	300	
Manufacturer: ASCO	Pressure (PSIG)	1.8	
Model Number: NP8323A36V	Relative Humidity (%)	100	
Purchase Order Number: DCR-892	Chemical Spray	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "A" OUTBOARD VALVE ISOLATION	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	9.4 E06	
Location: STEAM TUNNEL	Aging	40 YEARS	
Floor Elevation: 757' - 6"			
Flood Level Elevation: 760' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 34 P&ID: M114/F3 Loc Dwg: E329/D3 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: DCR-892 INDEX ITEM 5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 34 P&ID: M114/F2 Loc Dwg: E328/D4 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: DCR-892 INDEX ITEM 5							

A499-18
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: A499-18-O11

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EQ Equip No: A499-18-O12

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER	Operating Time	1 HOUR	
Plant I.D. Number: SV-4415B Component:	Temperature (*F)	SEE GENERAL NOTE 6	
SOLENOID VALVE	Pressure (PSIG)	SEE GENERAL NOTE 6	
Manufacturer: ASCO	Relative Humidity (%)	100	
Model Number: NP8323A36V	Chemical Spray	DEMIN WATER	
Purchase Order Number: DCR-892	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "B" INBOARD VALVE ISOLATION	Radiation (Rad)	2.1 EO7	
Accuracy: Spec: NA Location: DRYWELL	Aging	40 YEARS	
Floor Elevation: 757'-6"	Submergence	NA	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER	Operating Time	1 HOUR	
Plant I.D. Number: SV-4416B Component:	Temperature (*F)	300	
SOLENOID VALVE	Pressure (PSIG)	1.8	
Manufacturer: ASCO	Relative Humidity (%)	100	
Model Number: NP8323A36V	Chemical Spray	NA	
Purchase Order Number: DCR-892	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "B" OUTBOARD VALVE ISOLATION	Radiation (Rad)	9.4 EO6	
Accuracy: Spec: NA Location: STEAM TUNNEL	Aging	40 YEARS	
Floor Elevation: 757'-6"	Submergence	NA	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 34 P&ID: M114/C7 Loc Dwg: E329/C3 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: DCR-892 INDEX ITEM 5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 34 P&ID: M114/C8 Loc Dwg: E328/D4 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: DCR-892 INDEX ITEM 5							

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: A499-18-013

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EQ Equip No: A499-18-014

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER	Operating Time	1 HOUR	
Plant I.D. Number: SV-4418B Component: SOLENOID VALVE	Temperature (°F)	SEE GENERAL NOTE 6	
Manufacturer: ASCO	Pressure (PSIG)	SEE GENERAL NOTE 6	
Model Number: NP8323A36V	Relative Humidity (%)	100	
Purchase Order Number: DCR-892	Chemical Spray	DEMIN WATER	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "C" INBOARD VALVE ISOLATION	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	2.1 E07	
Location: DRYWELL	Aging	40 YEARS	
Floor Elevation: 757' - 6"			
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER	Operating Time	1 HOUR	
Plant I.D. Number: SV-4419B Component: SOLENOID VALVE	Temperature (°F)	300	
Manufacturer: ASCO	Pressure (PSIG)	1.8	
Model Number: NP8323A36V	Relative Humidity (%)	100	
Purchase Order Number: DCR-892	Chemical Spray	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "C" OUTBOARD VALVE ISOLATION	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	9.4 E06	
Location: STEAM TUNNEL	Aging	40 YEARS	
Floor Elevation: 757' - 6"			
Flood Level Elevation: 760' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins:	Environment:		EQ Sys No:		P&ID:		
1981	HARSH		34		M114/C3		
Loc Dwg: E329/F3	Elec Scheme: E122/11		VDR ID: NONE				
Mfr Model Ref:	DCR-892 INDEX ITEM 5						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981	Environment: HARSH			EQ Sys No: 34		P&ID: M114/C2	
Loc Dwg: E328/E4	Elec Scheme: E122/11			VDR ID: NONE			
Mfr Model Ref:	DCR-892 INDEX ITEM 5						

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: A499-18-015

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EQ Equip No: A499-18-016

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER Plant I.D. Number: SV-4420B Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP8323A36V Purchase Order Number: DCR-892 Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "D" INBOARD VALVE ISOLATION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 757' - 6"	Operating Time	1 HOUR	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
	Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Submergence		NA

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER Plant I.D. Number: SV-4421B Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP8323A36V Purchase Order Number: DCR-892 Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE "D" OUTBOARD VALVE ISOLATION Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757' -6"	Operating Time	1 HOUR	
	Temperature (°F)	300	
	Pressure (PSIG)	1.8	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.4 E06	
	Aging	40 YEARS	
	Flood Level Elevation: 760' -0" Above Flood Level: Yes: X No:	Submergence		NA

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 34 P&ID: M114/E7 Loc Dwg: E329/E3 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: DCR-892 INDEX ITEM 5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 34 P&ID: M114/E8 Loc Dwg: E328/E4 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: DCR-892 INDEX ITEM 5							

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SOLENOID VALVE Manufacturer: ASCO Model Number: 206-832-3RU NUREG 0588 Applicable: YES Accuracy: Demo: NA	Operating Time	1 HOUR		30 DAYS	007		REF. A	TYPE TEST	NONE
	Temperature (°F)	140		346	007		REF. A	TYPE TEST	NONE
	Pressure (PSIG)	0		110	007		REF. A	TYPE TEST	NONE
	Relative Humidity (%)	100		100	007		REF. A	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	2.7 E06		2.0 E08	007		REF. A,C	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	007		REF. B	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . ASCO TEST REPORT NO. AQS21678/TR REVISION A, JULY 1979 (CHRON 7318). TEST PROFILE IS FIGURE 2 OF THIS REPORT. B . AGING EVALUATION FORM A499-OOE REV. 1, DATED 9/6/83 (CHRON 13269). (REFERENCES SUMMARIZED IN SECTION IX.B OF SEMIANNUAL EQ	1 . 40 YEAR QUALIFIED LIFE REQUIRES REPLACEMENT OF ETHYLENE PROPYLENE ELASTOMERS AND INSPECTION OF THE SOLENOID COIL FOR DEGRADATION AFTER 20 YEARS AND VERIFICATION OF PROPER OPERATION YEARLY.

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Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
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DOCUMENTATION REFERENCES:	NOTES:
<p>REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 26.)</p>	

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Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: A499-22-007

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EQ Equip No: A499-22-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: DRYWELL COOLING WATER Plant I.D. Number: SV-5703A Component: SOLENOID VALVE Manufacturer: ASCO Model Number: 206-832-3RU Purchase Order Number: DCR-986 Function/Service: PRIMARY CONTAINMENT ISOLATION/DRYWELL COOLING WATER SYSTEM BACKWASH INLET ISOLATION LOOP A Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9"	Operating Time	1 HOUR	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.7 EO6	
	Aging	40 YEARS	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: DRYWELL COOLING WATER Plant I.D. Number: SV-5703B Component: SOLENOID VALVE Manufacturer: ASCO Model Number: 206-832-3RU Purchase Order Number: DCR-986 Function/Service: PRIMARY CONTAINMENT ISOLATION/DRYWELL COOLING WATER SYSTEM BACKWASH INLET ISOLATION LOOP B Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9"	Operating Time	1 HOUR	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.7 EO6	
	Aging	40 YEARS	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 38 P&ID: M157/G7 Loc Dwg: E317/E5 Elec Scheme: E113/94 VDR ID: NONE Mfr Model Ref: NG-80-1234/ATT. A--CHRON 2379							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 38 P&ID: M157/G7 Loc Dwg: E317/H7 Elec Scheme: E113/94 VDR ID: NONE Mfr Model Ref: NG-80-1234/ATT. A--CHRON 2379							

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Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

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EQ Equip No: A499-22-010

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: DRYWELL COOLING WATER	Operating Time	1 HOUR	
Plant I.D. Number: SV-5704A Component: SOLENOID VALVE	Temperature (°F)	140	
Manufacturer: ASCO	Pressure (PSIG)	0	
Model Number: 206-832-3RU	Relative Humidity (%)	100	
Purchase Order Number: DCR-986	Chemical Spray	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/DRYWELL COOLING WATER OUTLET ISOLATION LOOP A	Seismic	NA	
Accuracy: Spec: NA Location: TORUS ROOM SOUTH	Radiation (Rad)	2.7 E06	
Floor Elevation: 716'-9"	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: DRYWELL COOLING WATER	Operating Time	1 HOUR	
Plant I.D. Number: SV-5704B Component: SOLENOID VALVE	Temperature (°F)	140	
Manufacturer: ASCO	Pressure (PSIG)	0	
Model Number: 206-832-3RU	Relative Humidity (%)	100	
Purchase Order Number: DCR-986	Chemical Spray	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/DRYWELL COOLING WATER OUTLET ISOLATION LOOP B	Seismic	NA	
Accuracy: Spec: NA Location: TORUS ROOM SOUTH	Radiation (Rad)	2.7 E06	
Floor Elevation: 716'-9"	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981	Environment: HARSH		EQ Sys No: 38		P&ID: M157/H6		
Loc Dwg: E317/E5		Elec Scheme: E113/94		VDR ID: NONE			
Mfr Model Ref: NG-80-1234/ATT. A--CHRON 2379							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981	Environment: HARSH		EQ Sys No: 38		P&ID: M157/H6		
Loc Dwg: E317/G7	Elec Scheme: E113/94		VDR ID: NONE				
Mfr Model Ref: NG-80-1234/ATT. A--CHRON 2379							

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EQ Equip No: A499-22-012

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: DRYWELL COOLING WATER	Operating Time	1 HOUR	
Plant I.D. Number: SV-5718A Component: SOLENOID VALVE	Temperature (°F)	140	
Manufacturer: ASCO	Pressure (PSIG)	0	
Model Number: 206-832-3RU	Relative Humidity (%)	100	
Purchase Order Number: DCR-986	Chemical Spray	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/DRYWELL COOLING WATER OUTLET ISOLATION LOOP A	Seismic	NA	
Accuracy: Spec: NA Location: TORUS ROOM SOUTH	Radiation (Rad)	2.7 E06	
Floor Elevation: 716'-9"	Aging	40 YEARS	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: DRYWELL COOLING WATER	Operating Time	1 HOUR	
Plant I.D. Number: SV-5718B Component: SOLENOID VALVE	Temperature (°F)	140	
Manufacturer: ASCO	Pressure (PSIG)	0	
Model Number: 206-832-3RU	Relative Humidity (%)	100	
Purchase Order Number: DCR-986	Chemical Spray	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/DRYWELL COOLING WATER INLET ISOLATION LOOP B	Seismic	NA	
Accuracy: Spec: NA Location: TORUS ROOM NORTH	Radiation (Rad)	2.7 E06	
Floor Elevation: 716'-9"	Aging	40 YEARS	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 38 P&ID: M157/B8							
Loc Dwg: E317/E5 Elec Scheme: E113/94 VDR ID: NONE							
Mfr Model Ref: NG-80-1234/ATT. A--CHRON 2379							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981		Environment: HARSH		EQ Sys No: 38		P&ID: M157/B8	
Loc Dwg: E316/C7		Elec Scheme: E113/94		VDR ID: NONE			
Mfr Model Ref: NG-80-1234/ATT. A--CHRON 2379							

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Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

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EQ Equip No: A499-22-013

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EQ Equip No: A499-22-014

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: DRYWELL COOLING WATER	Operating Time	1 HOUR	
Plant I.D. Number: SV-5719A Component: SOLENOID VALVE	Temperature (*F)	140	
Manufacturer: ASCO	Pressure (PSIG)	0	
Model Number: 206-832-3RU	Relative Humidity (%)	100	
Purchase Order Number: DCR-986	Chemical Spray	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/DRYWELL COOLING WATER SYSTEM BACKWASH OUTLET ISOLATION Accuracy: Spec:	Seismic	NA	
NA Location: TORUS ROOM SOUTH	Radiation (Rad)	2.7 EO6	
Floor Elevation: 716' - 9"	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: DRYWELL COOLING WATER	Operating Time	1 HOUR	
Plant I.D. Number: SV-5719B Component: SOLENOID VALVE	Temperature (*F)	140	
Manufacturer: ASCO	Pressure (PSIG)	0	
Model Number: 206-832-3RU	Relative Humidity (%)	100	
Purchase Order Number: DCR-986	Chemical Spray	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/DRYWELL COOLING WATER SYSTEM BACKWASH OUTLET ISOLATION Accuracy: Spec:	Seismic	NA	
NA Location: TORUS ROOM NORTH	Radiation (Rad)	2.7 EO6	
Floor Elevation: 716' - 9"	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 38 P&ID: M157/B7							
Loc Dwg: E317/E5 Elec Scheme: E113/94 VDR ID: NONE							
Mfr Model Ref: NG-80-1234/ATT. A--CHRON 2379							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 38 P&ID: M157/A7							
Loc Dwg: E316/C7 Elec Scheme: E113/94 VDR ID: NONE							
Mfr Model Ref: NG-80-1234/ATT. A--CHRON 2379							

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E NUREG 0588 Applicable: YES Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A	TYPE TEST	NONE SEE NOTE (3)
	Temperature (°F)	SEE GENERAL NOTE 6		448	001		REF. A	TYPE TEST	NONE
	Pressure (PSIG)	SEE GENERAL NOTE 6		66	001		REF. A	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	001		REF. A	TYPE TEST	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	2.1 E07		2.0 E08	001		REF. A	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (2)	001		REF. A,B	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . ASCO TEST REPORT AQR-67368 REV. 0, DATED MARCH 1982 (CHRON 7411); TEST PROFILE IS FIGURE 4.2 OF THIS REPORT. B . AGING EVALUATION FORM A499-OOE REV. 1, DATED 9/6/83 (CHRON 13269). (REFERENCES SUMMARIZED IN SECTION IX.B OF SEMIANNUAL EQ	1 . ACTUAL SPRAY TEST USED A BORIC ACID SOLUTION WHICH IS MORE SEVERE THAN A DEMINERALIZED WATER SPRAY. 2 . 40 YEAR QUALIFIED LIFE REQUIRES REPLACEMENT OF ETHYLENE PROPYLENE ELASTOMERS AND INSPECTION OF THE SOLENOID COILS FOR DEGRADATION EVERY 4.5 YEARS. QUALIFIED LIFE ALSO REQUIRES VERIFICATION OF PROPER OPERATION YEARLY.

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DOCUMENTATION REFERENCES:	NOTES:
<p>REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 37.)</p>	<p>3 . THIS EQUIPMENT (PLANT-ID SV-4371B) WAS REVIEWED IN FRC TER C5257-499 DATED 8/18/82 AND CLASSIFIED AS CATEGORY I.A (EQUIPMENT QUALIFIED).</p>

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 Facility: DUANE ARNOLD
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EQ Equip No: A499-32-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL	Operating Time	1 HOUR	
Plant I.D. Number: SV-43718 Component: SOLENOID VALVE	Temperature (°F)	SEE GENERAL NOTE 6	
Manufacturer: ASCO	Pressure (PSIG)	SEE GENERAL NOTE 6	
Model Number: NP831665E	Relative Humidity (%)	100	
Purchase Order Number: DCR-892	Chemical Spray	DEMIN WATER	
Function/Service: PRIMARY CONTAINMENT ISOLATION/NITROGEN COMPR ISOL	Seismic	NA	
Accuracy: Spec: NA Location: DRYWELL	Radiation (Rad)	2.1 E07	
Floor Elevation: 757'-6"	Aging	40 YEARS	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL	Operating Time	30 DAYS	
Plant I.D. Number: SV-4302X Component: SOLENOID VALVE	Temperature (°F)	150	
Manufacturer: ASCO	Pressure (PSIG)	0	
Model Number: NP831665E	Relative Humidity (%)	100	
Purchase Order Number: DCR-918	Chemical Spray	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/CONTAINMENT PURGE OUTLET	Seismic	NA	
Accuracy: Spec: NA Location: H&V CONTROL VALVE RM	Radiation (Rad)	2.9 E05	
Floor Elevation: 812'-0"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1980 Environment: HARSH EQ Sys No: 29 P&ID: M143/F5 Loc Dwg: E329/B3 Elec Scheme: E122/24 VDR ID: NONE Mfr Model Ref: DCR-892 INDEX ITEM 5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1982 Environment: HARSH EQ Sys No: 29 P&ID: M143/D7 Loc Dwg: E322/D4 Elec Scheme: E122/12 VDR ID: NONE Mfr Model Ref: DCR-918 INDEX ITEM 59 (FCR 918-5)							

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: A499-32-003

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EQ Equip No: A499-32-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-4310 Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR 986 Function/Service: PREVENT RELEASE OF RADIOACTIVE MATERIAL /CONTAINMENT VENT PURGE EXHAUST BYPASS Accuracy: Spec: NA Location: H&V CONTROL VALVE RM Floor Elevation: 812'-0"	Operating Time	30 DAYS	
	Temperature (°F)	150	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.9 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-4303 Component: SOLENOID VALVE Manufacturer: ASCO Model Number: NP831665E Purchase Order Number: DCR-1109 Function/Service: CONTAINMENT ISOLATION /CONTAINMENT PURGE OUTLET ISOLATION Accuracy: Spec: NA Location: H&V CONTROL VALVE RM Floor Elevation: 812'-0"	Operating Time	30 DAYS	
	Temperature (°F)	150	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.9 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 29 P&ID: M143/D7 Loc Dwg: E322/D4 Elec Scheme: E122/12 VDR ID: NONE Mfr Model Ref: DCR-986							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1983 Environment: HARSH EQ Sys No: 29 P&ID: M143/D7 Loc Dwg: E322/D4 Elec Scheme: E122/13 VDR ID: NONE Mfr Model Ref: DCR-1109							

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SOLENOID VALVE Manufacturer: AUTOMATIC VALVE CO. Model Number: C5450-5 NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A,B	TYPE TEST/ ANALYSIS	NONE
	Temperature (°F)	SEE GEN NOTE 6		340	001		REF. A	TYPE TEST	NONE
	Pressure (PSIG)	SEE GEN NOTE 6		65	001		REF. A	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		DEMIN WATER	001		REF. B	ANALYSIS	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	2.6 E07		3.0 E07	001		REF. A	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	001		REF. C	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . BWR EQUIPMENT QUALIFICATION SUMMARY QSR-052-A-01, DATED 9/19/80 (CHRON 7500) AND ITS ATTACHMENT REPORT, ENVIRONMENTAL TESTING OF MSS/RV AIR CONTROL VALVES, NO. 126-62, DATED 1/15/75. TEST PROFILE IS SHOWN ON PAGE 3 OF QSR-052-A-01 AND PAGES 2 AND 3 OF NO 126-62. B . AUTOMATIC DEPRESSURIZATION SYSTEM SOLENOID VALVES	1 . TO ENSURE A QUALIFIED LIFE OF 40 YEARS, VITON ELASTOMERS SHOULD BE REPLACED AND ELECTRICAL SUBCOMPONENTS INSPECTED EVERY 20 YEARS. PROPER VALVE OPERATION SHOULD BE CHECKED YEARLY.

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Facility: DUANE ARNOLD
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DOCUMENTATION REFERENCES:	NOTES:
<p>(AUTOMATIC VALVE CO. MODEL C-5450-5) QUALIFICATION BY ANALYSIS BY BECHTEL POWER CORP., 3/1982 (CHRON 6800). C . AGING EVALUATION FORM A613-01 REV 1 DATED 7/8/82 (CHRON 12858).</p> <p>(REFERENCES SUMMARIZED IN SECTION VIII.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 24.)</p>	

A613-01
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: A613-01-001

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 64
 Revision: 2
 Date: 09/22/83

11186-234-NP-1

EQ Equip No: A613-01-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: AUTOMATIC DEPRESS- URIZATION Plant I.D. Number: SV-4400 Component: SOLENOID VALVE Manufacturer: AUTOMATIC VALVE CO. Model Number: C5450-5 Purchase Order Number: DCR-244 Function/Service: REACTOR CORE COOLING/ NUCLEAR SYSTEM PRESSURE RELIEF A Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775' - 11" Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	RAD DOSE BASED ON SECTION 2.1.2 OF REFERENCE B.
	Temperature (*F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	2.6 EO7	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: AUTOMATIC DEPRESS- URIZATION Plant I.D. Number: SV-4402 Component: SOLENOID VALVE Manufacturer: AUTOMATIC VALVE CO. Model Number: C5450-5 Purchase Order Number: DCR-244 Function/Service: REACTOR CORE COOLING/ NUCLEAR SYSTEM PRESSURE RELIEF B Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775' - 11" Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	RAD DOSE BASED ON SECTION 2.1.2 OF REFERENCE B.
	Temperature (*F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	2.6 EO7	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E330/C4 Mfr Model Ref: V.P. B21-3379-1(4)							
Environment: HARSH Elec Scheme: E121/2 EQ Sys No: 07 P&ID: M114/F5 VDR ID: 200423-2							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E330/B4 Mfr Model Ref: V.P. B21-3379-1(4)							
Environment: HARSH Elec Scheme: E121/2 EQ Sys No: 07 P&ID: M114/D6 VDR ID: 200423-2							

A613-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: A613-01-003

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 65
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 Date: 09/22/83

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EQ Equip No: A613-01-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: AUTOMATIC DEPRESS- URIZATION Plant I.D. Number: SV-4405 Component: SOLENOID VALVE Manufacturer: AUTOMATIC VALVE CO. Model Number: C5450-5 Purchase Order Number: DCR-244 Function/Service: REACTOR CORE COOLING/ NUCLEAR SYSTEM PRESSURE RELIEF C Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775' - 11"	Operating Time	30 DAYS	RAD DOSE BASED ON SECTION 2.1.2 OF REFERENCE B.
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	2.6 E07	
	Aging	40 YEARS	
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: AUTOMATIC DEPRESS- URIZATION Plant I.D. Number: SV-4406 Component: SOLENOID VALVE Manufacturer: AUTOMATIC VALVE CO. Model Number: C5450-5 Purchase Order Number: DCR-244 Function/Service: REACTOR CORE COOLING/ NUCLEAR SYSTEM PRESSURE RELIEF D Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775' - 11"	Operating Time	30 DAYS	RAD DOSE BASED ON SECTION 2.1.2 OF REFERENCE B.
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	2.6 E07	
	Aging	40 YEARS	
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E330/F4 Mfr Model Ref: V.P. B21-3379-1(4)							
Environment: HARSH Elec Scheme: E121/2 VDR ID: 200423-2							
EQ Sys No: 07 P&ID: M114/D4							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E330/F4 Mfr Model Ref: V.P. B21-3379-1(4)							
Environment: HARSH Elec Scheme: E121/2 VDR ID: 200423-2							
EQ Sys No: 07 P&ID: M114/F5							

B069-09

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: PRESSURE SWITCH Manufacturer: BARKSDALE Model Number: P1H-M85SS-V NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GEN NOTE 4	001		---	---	NONE
	Temperature (°F)	104		SEE GEN NOTE 7	001		---	---	NONE
	Pressure (PSIG)	0		SEE GEN NOTE 7	001		---	---	NONE
	Relative Humidity (%)	100		SEE GEN NOTE 7	001		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	8.9 E05		3.0 E06	001		REF. A,B	ANALYSIS	NONE
	Aging	40 YEARS		40 YEARS	001		REF. B	---	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . EDS PROBLEM FILE NO. 0460-067-001, MARCH 19, 1982 (CHRON 6863). B . AGING EVALUATION FORM B069-09 REV 1, DATED 1/16/83 (CHRON 10259).	

B069-09
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQ Equip No: B069-09-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: PS-8404A Component: PRESSURE SWITCH Manufacturer: BARKSDALE Model Number: P1H-M85SS-V Purchase Order Number: APED Function/Service: MITIGATE RADIOACTIVE RELEASE/UPSTREAM OUTBOARD MSIV A PRESS Accuracy: Spec: NA Location: A CRD RR/1C-145 Floor Elevation: 771' - 10" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	RAD DOSE BASED ON CALC 234-027 REV.O FOR CRD REPAIR ROOM
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.9 EO5	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: PS-8404B Component: PRESSURE SWITCH Manufacturer: BARKSDALE Model Number: P1H-M85SS-V Purchase Order Number: APED Function/Service: MITIGATE RADIOACTIVE RELEASE/UPSTREAM OUTBOARD MSIV B PRESS Accuracy: Spec: NA Location: A CRD RR/1C-145 Floor Elevation: 771' - 10" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	RAD DOSE BASED ON CALC 234-027 REV.O FOR CRD REPAIR ROOM
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.9 EO5	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 05 P&ID: M184/G3 Loc Dwg: M2/A5 Elec Scheme: E122/37 VDR ID: B21-N913A Mfr Model Ref: V.P. APED B21-22-4 SH 14, B21-84-1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 05 P&ID: M184/C8 Loc Dwg: M2/A5 Elec Scheme: E122/37 VDR ID: B21-N913B Mfr Model Ref: V.P. APED B21-33-4 SH 14, B21-84-1							

B069-09

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: B069-09-003

EQUIPMENT QUALIFICATION REPORT DATA SHEET

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EQ Equip No: B069-09-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: PS-8404C Component: PRESSURE SWITCH Manufacturer: BARKSDALE Model Number: P1H-M85SS-V Purchase Order Number: APED Function/Service: MITIGATE RADIOACTIVE RELEASE/UPSTREAM OUTBOARD MSIV C PRESS Accuracy: Spec: NA Location: A CRD RR/1C-145 Floor Elevation: 771' - 10" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	RAD DOSE BASED ON CALC 234-027 REV.O FOR CRD REPAIR ROOM
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.9 E05	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: PS-8404D Component: PRESSURE SWITCH Manufacturer: BARKSDALE Model Number: P1H-M85SS-V Purchase Order Number: APED Function/Service: MITIGATE RADIOACTIVE RELEASE/UPSTREAM OUTBOARD MSIV D PRESS Accuracy: Spec: NA Location: A CRD RR/1C-145 Floor Elevation: 771' - 10" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	RAD DOSE BASED ON CALC 234-027 REV.O FOR CRD REPAIR ROOM
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.9 E05	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Loc Dwg: M2/A5 Mfr Model Ref: V.P. APED 21-33-4 SH 14, B21-84-1							
Environment: HARSH Elec Scheme: E122/37 VDR ID: B21-N913C							
EQ Sys No: 05 P&ID: M184/F3							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Loc Dwg: M2/A5 Mfr Model Ref: V.P. APED B21-33-4 SH 14, B21-84-1							
Environment: HARSH Elec Scheme: E122/37 VDR ID: B21-N913C							
EQ Sys No: 05 P&ID: M184/F8							

B365-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: 600V CABLE Manufacturer: BOSTON INSULATED WIRE Model Number: RG-6A/U, 59B/U NUREG 0588 Applicable: YES Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A	TYPE TEST	NONE
	Temperature (*F)	SEE GEN NOTE 6		340	001		REF. A	TYPE TEST	NONE
	Pressure (PSIG)	SEE GEN NOTE 6		105	001		REF. A	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	001		REF. A	TYPE TEST	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	4.3 E07		2.0 E08	001		REF. A	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (2)	001		REF. B	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . BOSTON INSULATED WIRE AND CABLE CO. REPORT B913 (CHRON 7640) TEST PROFILE IS PAGE 8 OF THIS REPORT. B . AGING EVALUATION FORM B365-01 REV. 1, DATED 9/9/83 (CHRON 12967). (REFERENCES SUMMARIZED IN SECTION IX.D OF SEMIANNUAL EQ	1. SPRAY MAKE-UP WAS 0.28M H3BO3 SOLUTION ADJUSTED TO PH OF 10.5 WITH NAOH. THIS IS MORE SEVERE THAN DEMINERALIZED WATER. 2 . QUALIFIED LIFE OF 40 YEARS ASSUMES CONTINUOUS AMBIENT TEMPERATURES OF LESS THAN 180F.

B365-01

Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
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DOCUMENTATION REFERENCES:	NOTES:
<p>REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 110.)</p>	

B365-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	THE REQUIRED ENVIRONMENT
Plant I.D. Number: CABLE-COAX-BIW Component: 600V CABLE	Temperature (°F)	SEE GENERAL NOTE 6	IS THE WORST CASE TEMPER-
Manufacturer: BOSTON INSULATED WIRE	Pressure (PSIG)	SEE GENERAL NOTE 6	ATURE, HUMID-
Model Number: RG-6A/U, 59B/U	Relative Humidity (%)	100	ITY, PRESSURE
Purchase Order Number: 31252	Chemical Spray	DEMIN WATER	AND RADIATION
Function/Service: SUPPORT/POST ACCIDENT RADIATION MONITORING	Seismic	NA	CONDITIONS IN
Accuracy: Spec: NA	Radiation (Rad)	4.3 E07	THE DRYWELL.
Location: VARIOUS	Aging	40 YEARS	
Floor Elevation: VARIOUS	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (°F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:	Submergence		
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1979							
Environment: HARSH		EQ Sys No: 32		P&ID: NA			
Loc Dwg: NA		Elec Scheme: NA		VDR ID: NONE			
Mfgr Model Ref: IE PO 31252 (CHRON 13431)							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins:							
Environment:		EQ Sys No:		P&ID:			
Loc Dwg:		Elec Scheme:		VDR ID:			
Mfgr Model Ref:							

B572-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: TEMPERATURE ELEMENT (RTD) Manufacturer: BURNS ENGINEERING Model Number: TYPE E NUREG 0588 Applicable: NO Accuracy: Demo: NONE	Operating Time	30 DAY		SEE NOTE (1)	001		---	---	SEE NOTE (1)
	Temperature (*F)	277		SEE NOTE (1)	001		---	---	SEE NOTE (1)
	Pressure (PSIG)	1.2		SEE NOTE (1)	001		---	---	SEE NOTE (1)
	Relative Humidity (%)	100		SEE NOTE (1)	001		---	---	SEE NOTE (1)
	Chemical Spray	NA		SEE NOTE (1)	001		---	---	SEE NOTE (1)
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.3 E07		SEE NOTE (1)	001		---	---	SEE NOTE (1)
	Aging	40 YEARS		SEE NOTE (1)	001		---	---	SEE NOTE (1)
	Submergence	NA		---	---		---	---	---

DOCUMENTATION REFERENCES	NOTES
	1 . SEE ACTION ITEM 31.

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 73
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EQ Equip No: B572-01-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: TE-4324 Component: TEMPERATURE ELEMENT (RTD) Manufacturer: BURNS ENGINEERING Model Number: TYPE E Purchase Order Number: M-155 Function/Service: POST ACCIDENT MONITORING/TORUS WATER TEMPERATURE Accuracy: Spec: M-436 Location: TORUS ROOM Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (*F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	1.3 EO7	
	Radiation (Rad)	40 YEARS	
	Aging	NA	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: TE-4325 Component: TEMPERATURE ELEMENT (RTD) Manufacturer: BURNS ENGINEERING Model Number: TYPE E Purchase Order Number: M-155 Function/Service: POST ACCIDENT MONITORING/TORUS WATER TEMPERATURE Accuracy: Spec: M-436 Location: TORUS ROOM Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (*F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 EO7	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 36		P&ID: M-143	
Loc Dwg: NA	Elec Scheme:			VDR ID: NONE			
Mfgr Model Ref:							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 36		P&ID: M-143	
Loc Dwg: NA	Elec Scheme:			VDR ID: TYPE E			
Mfgr Model Ref:							

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATED VALVE Manufacturer: ELECTRODYNE Model Number: TN-24-400 NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		NONE	001		---	---	SEE NOTE (1)
	Temperature (*F)	277		NONE	001		---	---	SEE NOTE (1)
	Pressure (PSIG)	1.2		NONE	001		---	---	SEE NOTE (1)
	Relative Humidity (%)	100		NONE	001		---	---	SEE NOTE (1)
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	5.6 E06		NONE	001		---	---	SEE NOTE (1)
	Aging	40 YEARS		NONE	001		---	---	SEE NOTE (1)
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
	1. SEE ACTION ITEM NO 23

E 153-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: E 153-01-001

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EQ Equip No: E 153-01-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-1904 Component: MOTOR OPERATED VALVE Manufacturer: ELECTRODYNE Model Number: TN-24-400 Purchase Order Number: M-133C Function/Service: CONTAINMENT HEAT REMOVAL/RHR RECIRC INJECTION LOOP B Accuracy: Spec: NA Location: RHR VALVE ROOM Floor Elevation: 757'-6"	Operating Time	30 DAYS	MOTOR IS ALLIS- CHALMERS MODEL 012 AND S/N 1- 5137-48304- 1-2. MOTOR BRAKE IS STEARNS ELEC. MODEL 1-081-011 AND S/N B-814292.
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.6 E06	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-2004 Component: MOTOR OPERATED VALVE Manufacturer: ELECTRODYNE Model Number: TN-24-400 Purchase Order Number: M-133C Function/Service: CONTAINMENT HEAT REMOVAL/RHR RECIRC INJECTION LOOP A Accuracy: Spec: NA Location: RHR VALVE ROOM Floor Elevation: 757'-6"	Operating Time	30 DAYS	MOTOR IS ALLIS- CHALMERS MODEL 012 & SERIAL NO. 1-5137-48304- 1-1. MOTOR BRAKE IS STEARNS ELEC. MODEL 1-081-011 AND S/N B-814292.
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.6 E06	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M119/E6 Loc Dwg: M268/G7 Elec Scheme: E121/53 VDR ID: E11-FO17B Mfr Model Ref: V.P. M133C-25-3							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M120/F4 Loc Dwg: M248/E7 Elec Scheme: E121/53 VDR ID: E11-FO17A Mfr Model Ref: V.P. M133C-25-3							

E328-01

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT
EVALUATION SHEET

Sheet No: 76

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Date: 09/22/83

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: TEMPERATURE SWITCH Manufacturer: ESSEX CONTROLS Model Number: 351-253924 NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GENERAL NOTE 4	001		---	---	NONE
	Temperature (°F)	104		SEE GENERAL NOTE 7	001		---	---	NONE
	Pressure (PSIG)	0		SEE GENERAL NOTE 7	001		---	---	NONE
	Relative Humidity (%)	100		SEE GENERAL NOTE 7	001		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	3.8 E06		1.2 E07	001		REF. A	ANALYSIS	NONE
	Aging	40 YEARS		40 YEARS	001		REF. A	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . AGING EVALUATION FORM E328-00 REV 0, DATED 11/11/82 (CHRON 12756).	

E328-01

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: E328-01-001

EQUIPMENT QUALIFICATION REPORT
DATA SHEET

Sheet No. 77

Revision: 2

Date: 09/22/83

11186-234-NP-1

EQ Equip No: E328-01-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT	Operating Time	30 DAYS	RAD DOSE BASED ON A DISTANCE OF 15.5 FT FROM SGT FILTER (CALC 221-004 REV. 2)
Plant I.D. Number: TS-5836A Component: TEMPERATURE SWITCH	Temperature (°F)	104	
Manufacturer: ESSEX CONTROLS	Pressure (PSIG)	0	
Model Number: 351-253924	Relative Humidity (%)	100	
Purchase Order Number: M-81	Chemical Spray	NA	
Function/Service: MITIGATE RADIOACTIVE RELEASE/SGTS HEATER OVERTEMPERATURE PROTECTION (MANUAL RESET) Accuracy: Spec:	Seismic	NA	
NA Location: SGT ROOM	Radiation (Rad)	3.8 EO6	
Floor Elevation: 786' -0"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT	Operating Time	30 DAYS	RAD DOSE BASED ON A DISTANCE OF 15.5 FT FROM SGT FILTER (CALC 221-004 REV. 2)
Plant I.D. Number: TS-5836B Component: TEMPERATURE SWITCH	Temperature (°F)	104	
Manufacturer: ESSEX CONTROLS	Pressure (PSIG)	0	
Model Number: 351-253924	Relative Humidity (%)	100	
Purchase Order Number: M-81	Chemical Spray	NA	
Function/Service: MITIGATE RADIOACTIVE RELEASE/SGTS HEATER OVERTEMPERATURE PROTECTION (MANUAL RESET) Accuracy: Spec:	Seismic	NA	
NA Location: SGT ROOM	Radiation (Rad)	3.8 EO6	
Floor Elevation: 786' -0"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 10 P&ID: M158/G5							
Loc Dwg: M647/G6 Elec Scheme: E113/13 VDR ID: NONE							
Mfr Model Ref: CVI LTR TO BECHTEL DATED 9/28/82 (CHRON 9034)							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 10 P&ID: M158/C5							
Loc Dwg: M647/F6 Elec Scheme: E113/13 VDR ID: NONE							
Mfr Model Ref: CVI LTR TO BECHTEL DATED 9/28/82 (CHRON 9034)							

E328-02

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: TEMPERATURE SWITCH Manufacturer: ESSEX CONTROLS Model Number: 351-34912 NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GENERAL NOTE 4	001		---	---	NONE
	Temperature (*F)	104		SEE GENERAL NOTE 7	001		---	---	NONE
	Pressure (PSIG)	0		SEE GENERAL NOTE 7	001		---	---	NONE
	Relative Humidity (%)	100		SEE GENERAL NOTE 7	001		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	3.8 E06		1.2 E07	001		REF. A	ANALYSIS	NONE
	Aging	40 YEARS		40 YEARS	001		REF. A	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . AGING EVALUATION FORM E328-00 REV O, DATED 11/11/82 (CHRON 12756).	

E328-02
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: E328-02-001

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 79
 Revision: 2
 Date: 09/22/83

11186-234-NP-1

EQ Equip No: E328-02-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT	Operating Time	30 DAYS	RAD DOSE BASED ON A DISTANCE OF 15.5 FT FROM SGT FILTER (CALC 221-004 REV. 2)
Plant I.D. Number: TE-5805A Component:	Temperature (°F)	104	
TEMPERATURE SWITCH	Pressure (PSIG)	0	
Manufacturer:	Relative Humidity (%)	100	
ESSEX CONTROLS	Chemical Spray	NA	
Model Number:	Seismic	NA	
351-34912	Radiation (Rad)	3.8 E06	
Purchase Order Number:	Aging	40 YEARS	
M-81	Submergence	NA	
Function/Service:			
MITIGATE RADIOACTIVE RELEASE/SGTS HEATER OVERTEMPERATURE PROTECTION (AUTO RESET) Accuracy: Spec:			
NA Location:			
SGT ROOM			
Floor Elevation:			
786' - 0"			
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: TE-5805B Component: TEMPERATURE SWITCH Manufacturer: ESSEX CONTROLS Model Number: 351-34912 Purchase Order Number: M-81 Function/Service: MITIGATE RADIOACTIVE RELEASE/SGTS HEATER OVERTEMPERATURE PROTECTION (AUTO RESET) Accuracy: Spec: NA Location: SGT ROOM Floor Elevation: 786' - 0"	Operating Time	30 DAYS	RAD DOSE BASED ON A DISTANCE OF 15.5 FT FROM SGT FILTER (CALC 221-004 REV. 2)
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	3.8 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 10 P&ID: M158/G5 Loc Dwg: M647/G6 Elec Scheme: E113/13 VDR ID: NONE Mfr Model Ref: CVI LTR TO BECHTEL DATED 9/28/82 (CHRON 9034)							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 10 P&ID: M158/C5 Loc Dwg: M647/F6 Elec Scheme: E113/13 VDR ID: NONE Mfr Model Ref: CVI LTR TO BECHTEL DATED 9/28/82 (CHRON 9034)							

FO81-02
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: CONTROL UNIT TEMPERATURE SENSOR Manufacturer: FENWAL Model Number: 35003-0 NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GEN NOTE 4	001		---	---	NONE
	Temperature (*F)	104		SEE GEN NOTE 7	001		---	---	NONE
	Pressure (PSIG)	0		SEE GEN NOTE 7	001		---	---	NONE
	Relative Humidity (%)	100		SEE GEN NOTE 7	001		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	3.5 E08		4.8 E08	001		REF. A	ANALYSIS	NONE
	Aging	40 YEARS		40 YEARS	001		REF. A	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . AGING EVALUATION FORM FO81-02 REV O, DATED 10/8/82 (CHRON 10191). (REFERENCE SUMMARIZED IN SECTION VII.D OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENT ON TER EQUIPMENT ITEM 66.)	

FO81-02

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: FO81-02-001

EQUIPMENT QUALIFICATION REPORT
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Sheet No. 81

Revision: 2

Date: 09/22/83

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EQ Equip No: FO81-02-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: CU-5835A1 (SENSOR) Component: CONTROL UNIT TEMPERATURE SENSOR Manufacturer: FENWAL Model Number: 35003-0 Purchase Order Number: M-81 Function/Service: MITIGATE RADIOACTIVE RELEASE/FIRE DELUGE CARB BED Accuracy: Spec: NA Location: SGT ROOM/1N3455 Floor Elevation: 786'-0" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	RAD DOSE TAKEN FROM CALC 221-004 REV. 2
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	3.5 E08	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: CU-5835A2 (SENSOR) Component: CONTROL UNIT TEMPERATURE SENSOR Manufacturer: FENWAL Model Number: 35003-0 Purchase Order Number: M-81 Function/Service: MITIGATE RADIOACTIVE RELEASE/FIRE DELUGE CARB BED Accuracy: Spec: NA Location: SGT ROOM/1N3455 Floor Elevation: 786'-0" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	RAD DOSE TAKEN FROM CALC 221-004 REV. 2
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	3.5 E08	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 10 P&ID: M158/F4 Loc Dwg: E315/G5 Elec Scheme: E113/97 VDR ID: NONE Mfr Model Ref: WALKDOWN 8/81, SHEET 47							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 10 P&ID: M158/F4 Loc Dwg: E315/G5 Elec Scheme: E113/97 VDR ID: NONE Mfr Model Ref: WALKDOWN 8/81, SHEET 48							

F081-02
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: F081-02-003

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 82
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 Date: 09/22/83

11186-234-NP-1

EQ Equip No: F081-02-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: CU-5835B1 (SENSOR) Component: CONTROL UNIT TEMPERATURE SENSOR Manufacturer: FENWAL Model Number: 35003-0 Purchase Order Number: M-81 Function/Service: MITIGATE RADIOACTIVE RELEASE/FIRE DELUGE CARB BED Accuracy: Spec: NA Location: SGT ROOM/1N4446 Floor Elevation: 786'-0" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	RAD DOSE TAKEN FROM CALC 221-004 REV. 2
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	3.5 E08	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: CU-5835B2 (SENSOR) Component: CONTROL UNIT TEMPERATURE SENSOR Manufacturer: FENWAL Model Number: 35003-0 Purchase Order Number: M-81 Function/Service: MITIGATE RADIOACTIVE RELEASE/FIRE DELUGE CARB BED Accuracy: Spec: NA Location: SGT ROOM/1N4446 Floor Elevation: 786'-0" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	RAD DOSE TAKEN FROM CALC 221-004 REV. 2
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	3.5 E08	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E315/F6 Mfr Model Ref: WALKDOWN 8/81, SHEET 49 Environment: HARSH EQ Sys No: 10 Elec Scheme: E113/97 P&ID: M158/B4 VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E315/F6 Mfr Model Ref: WALKDOWN 8/81, SHEET 50 Environment: HARSH EQ Sys No: 10 Elec Scheme: E113/97 P&ID: M158/B4 VDR ID: NONE							

FO81-02
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: FO81-02-005

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 83
 Revision: 2
 Date: 09/22/83

11186-234-NP-1

EQ Equip No: FO81-02-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: CU-5837A1 (SENSOR) Component: CONTROL UNIT TEMPERATURE SENSOR Manufacturer: FENWAL Model Number: 35003-0 Purchase Order Number: M-81 Function/Service: MITIGATE RADIOACTIVE RELEASE/FIRE DELUGE CARB BED Accuracy: Spec: NA Location: SGT ROOM/1N3455 Floor Elevation: 786' - 0"	Operating Time	30 DAYS	RAD DOSE TAKEN FROM CALC 221-004 REV. 2
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	3.5 308	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANBOY GAS TREATMENT Plant I.D. Number: CU-5837A2 (SENSOR) Component: CONTROL UNIT TEMPERATURE SENSOR Manufacturer: FENWAL Model Number: 35003-0 Purchase Order Number: M-81 Function/Service: MITIGATE RADIOACTIVE RELEASE/FIRE DELUGE CARB BED Accuracy: Spec: NA Location: SGT ROOM/1N3455 Floor Elevation: 786' -0"	Operating Time	30 DAYS	RAD DOSE TAKEN FROM CALC 221-004 REV. 2
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	3.5 E08	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 10 P&ID: M158/F4 Loc Dwg: E315/G6 Elec Scheme: E113/97 VDR ID: NONE Mfr Model Ref: WALKDOWN 8/81, SHEET 51							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 10 P&ID: M158/F4 Loc Dwg: E315/G6 Elec Scheme: E113/97 VDR ID: NONE Mfr Model Ref: WALKDOWN 8/81, SHEET 52							

FO81-02
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: FO81-02-007

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 84
 Revision: 2
 Date: 09/22/83

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EQ Equip No: FO81-02-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT	Operating Time	30 DAYS	RAD DOSE TAKEN FROM CALC 221-004 REV. 2
Plant I.D. Number: CU-5837B1 (SENSOR) Component:	Temperature (°F)	104	
CONTROL UNIT TEMPERATURE SENSOR Manufacturer:	Pressure (PSIG)	0	
FENWAL	Relative Humidity (%)	100	
Model Number: 35003-0	Chemical Spray	NA	
Purchase Order Number: M-81	Seismic	NA	
Function/Service: MITIGATE RADIOACTIVE RELEASE/FIRE DELUGE CARB BED	Radiation (Rad)	3.5 E08	
Accuracy: Spec: NA Location: SGT ROOM/1N4446	Aging	40 YEARS	
Floor Elevation: 786' -0"	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: CU-5837B2 (SENSOR) Component: CONTROL UNIT TEMPERATURE SENSOR Manufacturer: FENWAL Model Number: 35003-0 Purchase Order Number: M-81 Function/Service: MITIGATE RADIOACTIVE RELEASE/FIRE DELUGE CARB BED Accuracy: Spec: NA Location: SGT ROOM/1N4446 Floor Elevation: 786' -0"	Operating Time	30 DAYS	RAD DOSE TAKEN FROM CALC 221-004 REV. 2
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	3.5 E08	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 10 P&ID: M158/B4 Loc Dwg: E315/F6 Elec Scheme: E113/97 VDR ID: NONE Mfr Model Ref: WALKDOWN 8/81, SHEET 53							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 10 P&ID: M158/B4 Loc Dwg: E315/F6 Elec Scheme: E113/97 VDR ID: NONE Mfr Model Ref: WALKDOWN 8/81, SHEET 54							

GO80-42
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

Sheet No: 85
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 Date: 09/22/83

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: HEATER Manufacturer: GE Model Number: 47C518675 NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GEN NOTE 4	001		REF. A,C	ANALYSIS	NONE
	Temperature (°F)	145		SEE GEN NOTE 7	001		---	---	NONE
	Pressure (PSIG)	0		SEE GEN NOTE 7	001		---	---	NONE
	Relative Humidity (%)	100		SEE GEN NOTE 7	001		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	2.1 E07		1.0 E08	001		REF. A,C	ANALYSIS	NONE
	Aging	40 YEARS		40 YEARS	001		REF. B,C	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . MAIN STEAM ISOLATION VALVE LEAKAGE CONTROL SYSTEM HEATERS QUALIFICATION BY ANALYSIS FOR NUCLEAR POWER STATION SERVICE PER IEEE 323-1974 BY BECHTEL POWER CORPORATION JANUARY, 1982 (CHRON 5814) B . AGING EVALUATION FORM GO80-42 REV. 1, DATED 9/7/83 (CHRON 13270).	

GO80-42

Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
Docket: 50-331

EQUIPMENT QUALIFICATION REPORT

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Date: 09/22/83

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DOCUMENTATION REFERENCES:	NOTES:
<p>C . SECTION VII.E OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 69.</p>	

GO80-42
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: GO80-42-001

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 87
 Revision: 2
 Date: 09/22/83

11186-234-NP-1

EQ Equip No: GO80-42-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: 1S-122A Component: HEATER Manufacturer: GE Model Number: 47C518675 Purchase Order Number: DCR 159 Function/Service: MITIGATE RADIOACTIVE RELEASE/VAPORIZATION OF MAIN STEAM LINE "A" LEAKAGE Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757'-6"	Operating Time	30 DAYS	SUBMERGENCE WILL NOT OCCUR FOR THE ACCIDENT WHICH THE EQUIPMENT IS ESSENTIAL TEMPERATURE FROM BLIEG-83-450 (CHRON 12611)
	Temperature (°F)	145	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.1 EO7	
	Aging	40 YEARS	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: 1S-122B Component: HEATER Manufacturer: GE Model Number: 47C518675 Purchase Order Number: DCR 159 Function/Service: MITIGATE RADIOACTIVE RELEASE/VAPORIZATION OF MAIN STEAM LINE "B" LEAKAGE Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757'-6"	Operating Time	30 DAYS	SUBMERGENCE WILL NOT OCCUR FOR THE ACCIDENT WHICH THE EQUIPMENT IS ESSENTIAL TEMPERATURE FROM BLIEG-83-450 (CHRON 12611)
	Temperature (°F)	145	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.1 EO7	
	Aging	40 YEARS	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1976 Environment: HARSH EQ Sys No: 05 P&ID: M184/F4 Loc Dwg: E328/D3 Elec Scheme: E122/39 VDR ID: B21-B926A Mfr Model Ref: V.P. 7884-B21-3830-50							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1976 Environment: HARSH EQ Sys No: 05 P&ID: M184/B8 Loc Dwg: E328/D3 Elec Scheme: E122/39 VDR ID: B21-B926B Mfr Model Ref: V.P. 7884-B21-3830-50							

G080-42
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: G080-42-003

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 88
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EQ Equip No: G080-42-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: 1S-122C Component: HEATER Manufacturer: GE Model Number: 47C518675 Purchase Order Number: DCR 159 Function/Service: MITIGATE RADIOACTIVE RELEASE/VAPORIZATION OF MAIN STEAM LINE "C" LEAKAGE Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757'-6" Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	SUBMERGENCE WILL NOT OCCUR FOR THE ACCIDENT WHICH THE EQUIPMENT IS ESSENTIAL TEMPERATURE FROM BLIEG-83-450 (CHRON 12611)
	Temperature (°F)	145	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: 1S-122D Component: HEATER Manufacturer: GE Model Number: 47C518675 Purchase Order Number: DCR 159 Function/Service: MITIGATE RADIOACTIVE RELEASE/VAPORIZATION OF MAIN STEAM LINE "D" LEAKAGE Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757'-6" Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	SUBMERGENCE WILL NOT OCCUR FOR THE ACCIDENT WHICH THE EQUIPMENT IS ESSENTIAL TEMPERATURE FROM BLIEG-83-450 (CHRON 12611)
	Temperature (°F)	145	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1976 Environment: HARSH EQ Sys No: 05 P&ID: M184/B3 Loc Dwg: E328/E3 Elec Scheme: E122/39 VDR ID: B21-B926C Mfr Model Ref: V.P. 7884-B21-3830-50							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1976 Environment: HARSH EQ Sys No: 05 P&ID: M184/E8 Loc Dwg: E328/E3 Elec Scheme: E122/39 VDR ID: B21-B926D Mfr Model Ref: V.P. 7884-B21-3830-50							

GO80-45
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: PUMP MOTOR Manufacturer: GE Model Number: 5K6336XC213A NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GEN NOTE 4	001		REF. A	ANALYSIS	NONE
	Temperature (°F)	140		SEE GEN NOTE 7	001		REF. A	ANALYSIS	NONE
	Pressure (PSIG)	0		SEE GEN NOTE 7	001		REF. A	ANALYSIS	NONE
	Relative Humidity (%)	100		SEE GEN NOTE 7	001		REF. A	ANALYSIS	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	5.9 E06		4.6 E07	001		REF. A	ANALYSIS	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	001		REF. A,B	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . GENERAL ELECTRIC QUALIFICATION REPORT NSE 76-1281 FOR DUANE ARNOLD NUCLEAR POWER STATION ENTITLED COMPARISON OF RHR & CORE SPRAY PUMP MOTOR DATA WITH QUALIFICATION TEST DATA FOR SIMILAR MOTORS, DATED 2/8/82 (CHRON 6599). B . AGING EVALUATION FORM GO80-45 DATED 6/18/82 (CHRON 8105).	1 . QUALIFIED LIFE REQUIRES IMPLEMENTATION OF MAINTENANCE/ INSPECTION PROCEDURES DESCRIBED IN SECTION 7 OF GE REPORT NSE 76-1281 DATED 2/8/82 (REFERENCE A).

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Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
Docket: 50-331

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DOCUMENTATION REFERENCES:	NOTES:
<p>REFERENCES SUMMARIZED IN SECTION VIII.F OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 119.</p>	

G080-45

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: G080-45-001

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EQ Equip No: G080-45-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	
Plant I.D. Number: 1P-229A Component: PUMP MOTOR	Temperature (*F)	140	
Manufacturer: GE	Pressure (PSIG)	0	
Model Number: 5K6336XC213A	Relative Humidity (%)	100	
Purchase Order Number: APED	Chemical Spray	NA	
Function/Service: REACTOR CORE COOLING/ RHR PUMP	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	5.9 E06	
Location: SE CRNR RM	Aging	40 YEARS	
Floor Elevation: 716' -9"	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	
Plant I.D. Number: 1P-229B Component: PUMP MOTOR	Temperature (*F)	140	
Manufacturer: GE	Pressure (PSIG)	0	
Model Number: 5K6336XC213A	Relative Humidity (%)	100	
Purchase Order Number: APED	Chemical Spray	NA	
Function/Service: REACTOR CORE COOLING/ RHR PUMP	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	5.9 E06	
Location: NW CRNR RM	Aging	40 YEARS	
Floor Elevation: 716' -9"	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 09		P&ID: M120/B3	
Loc Dwg: M1/C5	Elec Scheme: E121/41			VDR ID: E11-C002			
Mfr Model Ref:	EQUIPMENT MASTER FILE, 12/23/81, CARD 2						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 09		P&ID: M119/B7	
Loc Dwg: M1/F7	Elec Scheme: E121/41			VDR ID: E11-C002			
Mfr Model Ref:	EQUIPMENT MASTER FILE, 12/23/81, CARD 2						

G080-45
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: G080-45-003

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Sheet No. 92
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EQ Equip No: G080-45-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: 1P-229C Component: PUMP MOTOR Manufacturer: GE Model Number: 5K6336XC213A Purchase Order Number: APED Function/Service: REACTOR CORE COOLING/ RHR PUMP Accuracy: Spec: NA Location: SE CRNR RM Floor Elevation: 716' - 9"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: 1P-229D Component: PUMP MOTOR Manufacturer: GE Model Number: 5K6336XC213A Purchase Order Number: APED Function/Service: REACTOR CORE COOLING/ RHR PUMP Accuracy: Spec: NA Location: NW CRNR RM Floor Elevation: 716' - 9"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M120/B2 Loc Dwg: M1/C5 Elec Scheme: E121/41 VDR ID: E11-C002 Mfr Model Ref: EQUIPMENT MASTER FILE, 12/23/81, CARD 2							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M119/B8 Loc Dwg: M1/F7 Elec Scheme: E121/41 VDR ID: E11-C002 Mfr Model Ref: EQUIPMENT MASTER FILE, 12/23/81, CARD 2							

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Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: PUMP MOTOR Manufacturer: GE Model Number: 5K6336XC229A NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GENERAL NOTE 4	001		REF. A	ANALYSIS	NONE
	Temperature (*F)	140		SEE GEN NOTE 7	001		REF. A	ANALYSIS	NONE
	Pressure (PSIG)	0		SEE GEN NOTE 7	001		REF. A	ANALYSIS	NONE
	Relative Humidity (%)	100		SEE GEN NOTE 7	001		REF. A	ANALYSIS	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	5.9 E06		4.6 E07	001		REF. A	ANALYSIS	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	001		REF. A,B	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . GENERAL ELECTRIC QUALIFICATION REPORT NSE 76-1281 FOR DUANE ARNOLD NUCLEAR POWER STATION ENTITLED COMPARISON OF RHR & CORE SPRAY PUMP MOTOR DATA WITH QUALIFICATION TEST DATA FOR SIMILAR MOTORS, DATED 2/8/82 (CHRON 6599). B . AGING EVALUATION FORM G080-46 DATED 6/18/82 (CHRON 8105).	1 . QUALIFIED LIFE REQUIRES IMPLEMENTATION OF MAINTENANCE/ INSPECTION PROCEDURES DESCRIBED IN SECTION 7 OF GE REPORT NSE 76-1281 DATED 2/8/82 (REFERENCE A).

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Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
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DOCUMENTATION REFERENCES:	NOTES:
<p>REFERENCES SUMMARIZED IN SECTION VIII.F OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 91 AND 119.</p>	

GO80-46
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: GO80-46-001

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EQ Equip No: GO80-46-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CORE SPRAY	Operating Time	30 DAYS	
Plant I.D. Number: 1P-211A Component:	Temperature (°F)	140	
PUMP MOTOR	Pressure (PSIG)	0	
Manufacturer: GE	Relative Humidity (%)	100	
Model Number: 5K6336XC229A	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: REACTOR CORE COOLING/ CORE SPRAY PUMP	Radiation (Rad)	5.9 EO6	
Accuracy: Spec: NA Location: SE CRNR RM	Aging	40 YEARS	
Floor Elevation: 716'-9"	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CORE SPRAY	Operating Time	30 DAYS	
Plant I.D. Number: 1P-211B Component:	Temperature (°F)	140	
PUMP MOTOR	Pressure (PSIG)	0	
Manufacturer: GE	Relative Humidity (%)	100	
Model Number: 5K6336XC229A	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: REACTOR CORE COOLING/ CORE SPRAY PUMP	Radiation (Rad)	5.9 EO6	
Accuracy: Spec: NA Location: NW CRNR RM	Aging	40 YEARS	
Floor Elevation: 716'-9"	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 08 P&ID: M121/C3 Loc Dwg: E317/D2 Elec Scheme: E121/3 VDR ID: E21-COO1A Mfr Model Ref: EQUIPMENT MASTER FILE, 12/23/81, CARD 2							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 08 P&ID: M121/C4 Loc Dwg: E316/F8 Elec Scheme: E121/3 VDR ID: E21-COO1B Mfr Model Ref: EQUIPMENT MASTER FILE, 12/23/81, CARD 2							

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: PRESSURE DIFFERENTIAL TRANSMITTER Manufacturer: GE Model Number: 552032HKZZ2 NUREG 0588 Applicable: YES Accuracy: Demo:	Operating Time	30 DAYS		SEE GEN NOTE 4	001		---	---	NONE
	Temperature (*F)	140		SEE GEN NOTE 7	001		---	---	NONE
	Pressure (PSIG)	0		SEE GEN NOTE 7	001		---	---	NONE
	Relative Humidity (%)	100		SEE GEN NOTE 7	001		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	5.9 E06		NONE	001		---	---	SEE NOTE (1)
	Aging	40 YEARS		NONE SEE NOTE (1)	001		---	---	SEE NOTE (1)
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
	1. SEE ACTION ITEM 6.

G080-48
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLO
 Unit: 1
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 EQ Equip No: G080-48-001

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EQ Equip No: G080-48-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: PDT-1947 Component: PRESSURE DIFFERENTIAL TRANSMITTER Manufacturer: GE Model Number: 552032HKZZ2 Purchase Order Number: APED Function/Service: REACTOR CORE COOLING/ SERVICE WATER INLET DIFFERENTIAL PRESSURE Accuracy: Spec: 0.5% Location: NW CRNR RM/1C-129B Floor Elevation: 716' -9" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 EO6	
	Aging	40 YEARS	
Flood Level	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: PDT-2046 Component: PRESSURE DIFFERENTIAL TRANSMITTER Manufacturer: GE Model Number: 552032HKZZ2 Purchase Order Number: APED Function/Service: REACTOR CORE COOLING/ SERVICE WATER INLET DIFFERENTIAL PRESSURE Accuracy: Spec: 0.5% Location: SE CRNR RM/1C-129A Floor Elevation: 716' -9" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 EO6	
	Aging	40 YEARS	
Flood Level	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: M1/E7 Mfr Model Ref: DATA SHEET E11-14 Environment: HARSH Elec Scheme: E121/57 EQ Sys No: 09 P&ID: M119/C4 VDR ID: E11-N002B							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: M1/E7 Mfr Model Ref: DATA SHEET E11-14 Environment: HARSH Elec Scheme: E121/58 EQ Sys No: 09 P&ID: M120/C5 VDR ID: E11-N002A							

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: FLOW TRANSMITTER Manufacturer: GE Model Number: 555111BDAA-3PDF NUREG 0588 Applicable: NO Accuracy: Demo: NONE	Operating Time	30 DAYS		SEE NOTE (1)	002		---	---	SEE NOTE (1)
	Temperature (°F)	140		SEE GENERAL NOTE 4	002		---	---	SEE GENERAL NOTE 4
	Pressure (PSIG)	0		SEE GENERAL NOTE 4	002		---	---	SEE GENERAL NOTE 4
	Relative Humidity (%)	100		SEE GENERAL NOTE 4	002		---	---	SEE GENERAL NOTE 4
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	5.9 E06		SEE NOTE (1)	002		---	---	SEE NOTE (1)
	Aging	40 YEARS		SEE NOTE (1)	002		---	---	SEE NOTE (1)
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
	1 . SEE ACTION ITEM 35.

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: G080-67-002

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EQ Equip No: G080-67-003

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: FT-2110 Component: FLOW TRANSMITTER Manufacturer: GE Model Number: 555111BDAA-3PDF Purchase Order Number: APED Function/Service: POST ACCIDENT MONITORING/MONITOR CORE SPRAY FLDW Accuracy: Spec: +-70 GPM Location: SE CRNR RM/1C123 Floor Elevation: 716'-9"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: FT-2130 Component: FLOW TRANSMITTER Manufacturer: GE Model Number: 555111BDAA-3PDF Purchase Order Number: APED Function/Service: POST ACCIDENT MONITORING/MONITOR CORE SPRAY FLOW Accuracy: Spec: +-70 GPM Location: NW CRNR RM/1C124 Floor Elevation: 716'-9"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M121/F5 Loc Dwg: M405-1/E7 Elec Scheme: E121/9 VDR ID: NONE Mfr Model Ref: APED-E21-09							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M121/D5 Loc Dwg: M405-1/C5 Elec Scheme: E121/10 VDR ID: NONE Mfr Model Ref: APED-E21-09							

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: ELECTRICAL PENETRATIONS Manufacturer: GE Model Number: NSO4 CANNISTER TYPE NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A,B,D	TYPE TEST/ ANALYSIS	NONE
	Temperature (°F)	SEE GEN NOTE 6		340	001		REF. A,D	TYPE TEST	NONE
	Pressure (PSIG)	SEE GEN NOTE 6		63	001		REF. A,D	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A,D	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	001		REF. A,D,E	TYPE TEST/ ANALYSIS	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	2.6 EO7		4.0 EO7 SEE NOTE (2)	001		REF. B,D,E	TYPE TEST	SEE NOTE (2)
	Aging	40 YEARS		40 YEARS SEE NOTES (2,3)	001		REF. C,D,E	TYPE TEST/ ANALYSIS	SEE NOTE (2)
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . GE QUALIFICATION TEST REPORT FOR FO1 ELECTRICAL PENETRATION ASSEMBLIES DATED APRIL 30, 1971 (CHRON 6898). B . LETTER FROM G.G. SHERWOOD (GENERAL ELECTRIC) TO D.G. EISENHUT (NRC), DATED 12/2/77 (CHRON 6897). C . AGING EVALUATION FORM G080-00 REV. 1, DATED 8/29/83 (CHRON 13178).	1 . REPRESENTATIVE ELECTRICAL PENETRATION ASSEMBLIES WERE SUBJECTED TO A SUPERHEATED STEAM ENVIRONMENT AS PART OF THEIR TEST PROGRAM. THE DAEC PENETRATIONS ARE SHIELDED FROM THE EFFECTS OF WATER SPRAY BY A METAL ENCLOSURE WHICH TOTALLY SURROUNDS THE PENETRATION AND ELECTRICAL TERMINATION AREA. THE ENCLOSURE'S ORIENTATION AND ADEQUACY FOR SHIELDING

G080-84

Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
Docket: 50-331

EQUIPMENT QUALIFICATION REPORT

Sheet No. 101
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DOCUMENTATION REFERENCES:	NOTES:
<p>D . SECTION VII.J OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 118.</p> <p>E . WALKDOWN RESULTS DATED 6/22/83 (CHRON 12242).</p>	<p>AGAINST WATER SPRAY WAS EVALUATED TO BE ADEQUATE AS A RESULT OF A WALKDOWN DURING THE CYCLE 7 REFUELING OUTAGE (SEE REFERENCE E).</p> <p>2 . THIS NOTE APPLIES TO PENETRATION JX-105A,B,C,D AND JX-104A ONLY; SEE ACTION ITEM 20.</p> <p>3 . QUALIFIED LIFE OF 40 YEARS IS SUPPORTED BY THE FOLLOWING SURVEILLANCE:</p> <p>A. PERIODIC VERIFICATION OF THE INTEGRITY OF THE PENETRATION EPOXY SEALS BY CONTAINMENT TYPE B TESTING AS SPECIFIED IN THE DAEC TECHNICAL SPECIFICATIONS.</p> <p>B. INSPECTION OF THE EPOXY SEALANT COATING ONCE A CYCLE AS REQUIRED BY ELECTRICAL PENETRATIONS INSTALLATION INSTRUCTIONS FOR DUANE ARNOLD GEK-32501 (V.P. 7884-E1-43-1). RECOATING IS REQUIRED IF DEGRADATION (AS DEFINED IN SECTION III OF THE INSTALLATION INSTRUCTIONS) IS FOUND.</p> <p>C. CONTINUOUSLY PRESSURIZING THE PENETRATION ASSEMBLIES WITH NITROGEN AND MONITORING THE PRESSURE AT LEAST ANNUALLY FOR CONTINUED INTEGRITY.</p>

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: G080-84-001

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 Revision: 2
 Date: 09/22/83

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EQ Equip No: G080-84-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS Plant I.D. Number: JX-104A Component: ELECTRICAL PENETRATIONS Manufacturer: GE Model Number: NSO4 CANNISTER TYPE Purchase Order Number: E-001 Function/Service: PRIMARY CONTAINMENT ISOLATION/INSTRUMENT AND CONTROL Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 761' - 4" Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	RAD DOSE FROM CALCULATION 221-015 REVISION 1
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	2.6 E07	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS Plant I.D. Number: JX-104B Component: ELECTRICAL PENETRATIONS Manufacturer: GE Model Number: NSO4 CANNISTER TYPE Purchase Order Number: E-001 Function/Service: PRIMARY CONTAINMENT ISOLATION/INSTRUMENT AND CONTROL Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 761' - 4" Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	RAD DOSE FROM CALCULATION 221-015 REVISION 1
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	2.6 E07	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 32		P&ID: NA	
Loc Dwg: M41	Elec Scheme: E807			VDR ID: 238X7024SG1			
Mfr Model Ref:	GE SPEC 175A9005, CHRON 6899						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 32		P&ID: NA	
Loc Dwg: M41	Elec Scheme: E807			VDR ID: 238X702RXG1			
Mfr Model Ref:	GE SPEC 175A9005, CHRON 6899						

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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 EQ Equip No: GO80-84-003

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EQ Equip No: GO80-84-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	RAD DOSE FROM CALCULATION 221-015 REVISION 1
Plant I.D. Number: JX-104C Component:	Temperature (°F)	SEE GENERAL NOTE 6	
ELECTRICAL PENETRATIONS Manufacturer:	Pressure (PSIG)	SEE GENERAL NOTE 6	
GE	Relative Humidity (%)	100	
Model Number: NSO4 CANNISTER TYPE Purchase Order Number:	Chemical Spray	DEMIN WATER	
E-001	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/INSTRUMENT AND CONTROL	Radiation (Rad)	2.6 E07	
Accuracy: Spec: NA Location: DRYWELL	Aging	40 YEARS	
Floor Elevation: 761' - 4"	Submergence	NA	
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	RAD DOSE FROM CALCULATION 221-015 REVISION 1
Plant I.D. Number: JX-104D Component:	Temperature (°F)	SEE GENERAL NOTE 6	
ELECTRICAL PENETRATIONS Manufacturer:	Pressure (PSIG)	SEE GENERAL NOTE 6	
GE	Relative Humidity (%)	100	
Model Number: NSO4 CANNISTER TYPE Purchase Order Number:	Chemical Spray	DEMIN WATER	
E-001	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/INSTRUMENT AND CONTROL	Radiation (Rad)	2.6 E07	
Accuracy: Spec: NA Location: DRYWELL	Aging	40 YEARS	
Floor Elevation: 761' - 4"	Submergence	NA	
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 32 P&ID: NA Loc Dwg: M41 Elec Scheme: E807 VDR ID: 238X702RSG1 Mfr Model Ref: GE SPEC 175A9005, CHRON 6899							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 32 P&ID: NA Loc Dwg: M41 Elec Scheme: E807 VDR ID: 238X702RSG1 Mfr Model Ref: GE SPEC 175A9005, CHRON 6899							

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 Owner: IOWA ELECTRIC
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EQ Equip No: GO80-84-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS Plant I.D. Number: JX-103 Component: ELECTRICAL PENETRATIONS Manufacturer: GE Model Number: NSO4 CANNISTER TYPE: Purchase Order Number: E-001 Function/Service: PRIMARY CONTAINMENT ISOLATION/ THERMOCOUPLE Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 761'-4" Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	RAD DOSE FROM CALCULATION 221-015 REVISION 1
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	2.6 E07	
	Aging	40 YEARS	
Flood Level	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS Plant I.D. Number: JX-105A Component: ELECTRICAL PENETRATIONS Manufacturer: GE Model Number: NSO4 CANNISTER TYPE: Purchase Order Number: E-001 Function/Service: PRIMARY CONTAINMENT ISOLATION/LOW VOLTAGE AND MISC. POWER Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 761'-4" Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	RAD DOSE FROM CALCULATION 221-015 REVISION 1
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	2.6 E07	
	Aging	40 YEARS	
Flood Level	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Loc Dwg: M41 Mfr Model Ref: GE SPEC 175A9005, CHRON 6899 Environment: HARSH EQ Sys No: 32 Elec Scheme: E807 P&ID: NA VDR ID: 238X705RSG1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Loc Dwg: M41 Mfr Model Ref: GE SPEC 175A9005, CHRON 6899 Environment: HARSH EQ Sys No: 32 Elec Scheme: E807 P&ID: NA VDR ID: 238X704RSG1							

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EQ Equip No: G080-84-007

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EQ Equip No: G080-84-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	RAD DOSE FROM CALCULATION 221-015 REVISION 1
Plant I.D. Number: JX-105B Component:	Temperature (°F)	SEE GENERAL NOTE 6	
ELECTRICAL PENETRATIONS Manufacturer:	Pressure (PSIG)	SEE GENERAL NOTE 6	
GE	Relative Humidity (%)	100	
Model Number: NSO4 CANNISTER TYPE Purchase Order Number:	Chemical Spray	DEMIN WATER	
E-001	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/LDW VOLTAGE AND MISC. POWER	Radiation (Rad)	2.6 E07	
Accuracy: Spec: NA Location: DRYWELL	Aging	40 YEARS	
Floor Elevation: 761'-4"	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	RAD DOSE FROM CALCULATION 221-015 REVISION 1
Plant I.D. Number: JX-105C Component:	Temperature (°F)	SEE GENERAL NOTE 6	
ELECTRICAL PENETRATIONS Manufacturer:	Pressure (PSIG)	SEE GENERAL NOTE 6	
GE	Relative Humidity (%)	100	
Model Number: NSO4 CANNISTER TYPE Purchase Order Number:	Chemical Spray	DEMIN WATER	
E-001	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/LOW VOLTAGE AND MISC. POWER	Radiation (Rad)	2.6 E07	
Accuracy: Spec: NA Location: DRYWELL	Aging	40 YEARS	
Floor Elevation: 761'-4"	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH		EQ Sys No: 32		P&ID: NA		
Loc Dwg: M41	Elec Scheme: E807		VDR ID: 238X704RSG1				
Mfr Model Ref:	GE SPEC 175A9005, CHRON 6899						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 32		P&ID: NA	
Loc Dwg: M41	Elec Scheme: E807			VDR ID: 238X704RSG1			
Mfr Model Ref:	GE SPEC 175A9005, CHRON 6899						

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Facility: DUANE ARNOLD

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EQ Equip No: G080-84-009

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	RAD DOSE FROM CALCULATION 221-015 REVISION 1
Plant I.D. Number: JX-105D Component: ELECTRICAL PENETRATIONS Manufacturer: GE	Temperature (*F)	SEE GENERAL NOTE 6	
Model Number: NSO4 CANNISTER TYPE Purchase Order Number: E-001	Pressure (PSIG)	SEE GENERAL NOTE 6	
Function/Service: PRIMARY CONTAINMENT ISOLATION/LOW VOLTAGE AND MISC. POWER	Relative Humidity (%)	100	
Accuracy: Spec: NA Location: DRYWELL	Chemical Spray	DEMIN WATER	
Floor Elevation: 761' - 4"	Seismic	NA	
	Radiation (Rad)	2.6 E07	
	Aging	40 YEARS	
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (*F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:	Submergence		
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:			

Accidents:	LDCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NO	NA

Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 32	P&ID: NA
Loc Dwg: M41	Elec Scheme: E807	VDR ID: 238X704RSG1	
Mfr Model Ref: GE SPEC 175A9005, CHRON 6899			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM

Qual Life Begins:	Environment:	EQ Sys No:	P&ID:
Loc Dwg:	Elec Scheme:	VDR ID:	
Mfr Model Ref:			

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: ELECTRICAL PENETRATION Manufacturer: GE Model Number: NSO3 CANNISTER TYPE NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A,B,D	TYPE TEST/ ANALYSIS	NONE
	Temperature (°F)	SEE GEN NOTE 6		340	001		REF. A,D	TYPE TEST	NONE
	Pressure (PSIG)	SEE GEN NOTE 6		63	001		REF. A,D	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A,D	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	001		REF. A,D,E	TYPE TEST/ ANALYSIS	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	2.6 E07		4.0 E07	001		REF. B,D	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE 2	001		REF. C,D,E	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . GE QUALIFICATION TEST REPORT FOR FO1 ELECTRICAL PENETRATION ASSEMBLIES DATED APRIL 30, 1971 (CHRON 6898). B . LETTER FROM G.G. SHERWOOD (GENERAL ELECTRIC) TO D.G. EISENHUT (NRC), DATED 12/2/77 (CHRON 6897). C . AGING EVALUATION FORM G080-00 REV. 1, DATED 8/29/83 (CHRON 13178).	1 . REPRESENTATIVE ELECTRICAL PENETRATION ASSEMBLIES WERE SUBJECTED TO A SUPERHEATED STEAM ENVIRONMENT AS PART OF THEIR TEST PROGRAM. THE DAEC PENETRATIONS ARE SHIELDED FROM THE EFFECTS OF WATER SPRAY BY A METAL ENCLOSURE WHICH TOTALLY SURROUNDS THE PENETRATION AND ELECTRICAL TERMINATION AREA. THE ENCLOSURE'S ORIENTATION AND ADEQUACY FOR SHIELDING

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DOCUMENTATION REFERENCES:	NOTES:
<p>D . SECTION VII.J OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 118.</p> <p>E . WALKDOWN RESULTS DATED 6/22/83 (CHRON 12242).</p>	<p>AGAINST WATER SPRAY WAS EVALUATED TO BE ADEQUATE AS A RESULT OF A WALKDOWN DURING THE CYCLE 7 REFUELING OUTAGE (SEE REFERENCE E).</p> <p>2 . QUALIFIED LIFE OF 40 YEARS IS SUPPORTED BY THE FOLLOWING SURVEILLANCE:</p> <ul style="list-style-type: none">A. PERIODIC VERIFICATION OF THE INTEGRITY OF THE PENETRATION EPOXY SEALS BY CONTAINMENT TYPE B TESTING AS SPECIFIED IN THE DAEC TECHNICAL SPECIFICATIONS.B. INSPECTION OF THE EPOXY SEALANT COATING ONCE A CYCLE AS REQUIRED BY ELECTRICAL PENETRATIONS INSTALLATION INSTRUCTIONS FOR DUANE ARNOLD GEK-32501 (V.P. 7884-E1-43-1). RECOATING IS REQUIRED IF DEGRADATION (AS DEFINED IN SECTION III OF THE INSTALLATION INSTRUCTIONS) IS FOUND.C. CONTINUOUSLY PRESSURIZING THE PENETRATION ASSEMBLIES WITH NITROGEN AND MONITORING THE PRESSURE AT LEAST ANNUALLY FOR CONTINUED INTEGRITY.

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Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

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EQ Equip No: GO80-88-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	RAD DOSE FROM CALCULATION 221-015 REVISION 1
Plant I.D. Number: JX-101A Component:	Temperature (*F)	SEE GENERAL NOTE 6	
ELECTRICAL PENETRATION Manufacturer:	Pressure (PSIG)	SEE GENERAL NOTE 6	
GE	Relative Humidity (%)	100	
Model Number: NSO3 CANNISTER TYPE Purchase Order Number:	Chemical Spray	DEMIN WATER	
E-001	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MEDIUM VOLTAGE	Radiation (Rad)	2.6 E07	
Accuracy: Spec: NA Location: DRYWELL	Aging	40 YEARS	
Floor Elevation: 757'-6"	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	RAD DOSE FROM CALCULATION 221-015 REVISION 1
Plant I.D. Number: JX-101B Component:	Temperature (*F)	SEE GENERAL NOTE 6	
ELECTRICAL PENETRATION Manufacturer:	Pressure (PSIG)	SEE GENERAL NOTE 6	
GE	Relative Humidity (%)	100	
Model Number: NSO3 CANNISTER TYPE Purchase Order Number:	Chemical Spray	DEMIN WATER	
E-001	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MEDIUM VOLTAGE	Radiation (Rad)	2.6 E07	
Accuracy: Spec: NA Location: DRYWELL	Aging	40 YEARS	
Floor Elevation: 757'-6"	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 32		P&ID: NA	
Loc Dwg: M41	Elec Scheme: E807			VDR ID: 238X703RSG001			
Mfgr Model Ref:	GE SPEC 175A9005, CHRON 6899						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH		EQ Sys No: 32		P&ID: NA		
Loc Dwg: M41	Elec Scheme: E807		VDR ID: 238X703RSG001				
Mfr Model Ref:	GE SPEC 175A9005, CHRON 6899						

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: ELECTRICAL PENETRATION Manufacturer: GE Model Number: NS02-II CANNISTER TYPE NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A,B,D	TYPE TEST/ ANALYSIS	NONE
	Temperature (*F)	SEE GEN NOTE 6		340	001		REF. A,D	TYPE TEST	NONE
	Pressure (PSIG)	SEE GEN NOTE 6		63	001		REF. A,D	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A,D	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	001		REF. A,D,E	TYPE TEST/ ANALYSIS	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	2.6 E07		4.0 E07	001		REF. B,D	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (2)	001		REF. C,D	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . GE QUALIFICATION TEST REPORT FOR F01 ELECTRICAL PENETRATION ASSEMBLIES DATED APRIL 30, 1971 (CHRON 6898). B . LETTER FROM G.G. SHERWOOD (GENERAL ELECTRIC) TO D.G. EISENHUT (NRC), DATED 12/2/77 (CHRON 6897). C . AGING EVALUATION FORM G080-00 REV. 1, DATED 8/29/83 (CHRON 13178).	1 . REPRESENTATIVE ELECTRICAL PENETRATION ASSEMBLIES WERE SUBJECTED TO A SUPERHEATED STEAM ENVIRONMENT AS PART OF THEIR TEST PROGRAM. THE DAEC PENETRATIONS ARE SHIELDED FROM THE EFFECTS OF WATER SPRAY BY A METAL ENCLOSURE WHICH TOTALLY SURROUNDS THE PENETRATION AND ELECTRICAL TERMINATION AREA. THE ENCLOSURE'S ORIENTATION AND ADEQUACY FOR SHIELDING

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DOCUMENTATION REFERENCES:	NOTES:
<p>D . SECTION VII.J OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 118.</p> <p>E . WALKDOWN RESULTS DATED 6/22/83 (CHRON 12242).</p>	<p>AGAINST WATER SPRAY WAS EVALUATED TO BE ADEQUATE AS A RESULT OF A WALKDOWN DURING THE CYCLE 7 REFUELING OUTAGE (SEE REFERENCE E).</p> <p>2 . QUALIFIED LIFE OF 40 YEARS IS SUPPORTED BY THE FOLLOWING SURVEILLANCE:</p> <ul style="list-style-type: none">A. PERIODIC VERIFICATION OF THE INTEGRITY OF THE PENETRATION EPOXY SEALS BY CONTAINMENT TYPE B TESTING AS SPECIFIED IN THE DAEC TECHNICAL SPECIFICATIONS.B. INSPECTION OF THE EPOXY SEALANT COATING ONCE A CYCLE AS REQUIRED BY ELECTRICAL PENETRATIONS INSTALLATION INSTRUCTIONS FOR DUANE ARNOLD GEK-32501 (V.P. 7884-E1-43-1). RECOATING IS REQUIRED IF DEGRADATION (AS DEFINED IN SECTION III OF THE INSTALLATION INSTRUCTIONS) IS FOUND.C. CONTINUOUSLY PRESSURIZING THE PENETRATION ASSEMBLIES WITH NITROGEN AND MONITORING THE PRESSURE AT LEAST ANNUALLY FOR CONTINUED INTEGRITY.

G080-90

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: G080-90-001

EQUIPMENT QUALIFICATION REPORT
DATA SHEET

Sheet No. 112

Revision: 2

Date: 09/22/83

11186-234-NP-1

EQ Equip No: G080-90-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	RAD DOSE FROM CALCULATION 211-015 REV. 1
Plant I.D. Number: JX-100A Component:	Temperature (°F)	SEE GENERAL NOTE 6	
ELECTRICAL PENETRATION Manufacturer:	Pressure (PSIG)	SEE GENERAL NOTE 6	
GE	Relative Humidity (%)	100	
Model Number: NS02-II CANNISTER TYPE Purchase Order Number:	Chemical Spray	DEMIN WATER	
E-001	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/INSTRUMENT AND CONTROL	Radiation (Rad)	2.6 E07	
Accuracy: Spec: NA Location: DRYWELL	Aging	40 YEARS	
Floor Elevation: 761'-4"	Submergence	NA	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	RAD DOSE FROM CALCULATION 211-015 REV. 1
Plant I.D. Number: JX-100B Component:	Temperature (°F)	SEE GENERAL NOTE 6	
ELECTRICAL PENETRATION Manufacturer:	Pressure (PSIG)	SEE GENERAL NOTE 6	
GE	Relative Humidity (%)	100	
Model Number: NS02-II CANNISTER TYPE Purchase Order Number:	Chemical Spray	DEMIN WATER	
E-001	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/INSTRUMENT AND CONTROL	Radiation (Rad)	2.6 E07	
Accuracy: Spec: NA Location: DRYWELL	Aging	40 YEARS	
Floor Elevation: 761'-4"	Submergence	NA	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA

Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 32	P&ID: NA
Loc Dwg: M41	Elec Scheme: E807	VDR ID: 238X701RSG1	
Mfr Model Ref:	GE SPEC 175A9005, CHRON 6899		

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH		EQ Sys No: 32		P&ID: NA		
Loc Dwg: M41	Elec Scheme: E807		VDR ID: 238X701RSG1				
Mfr Model Ref:	GE SPEC 175A9005, CHRON 6899						

G080-90

Owner: IDWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: G080-90-003

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 113
 Revision: 2
 Date: 09/22/83

11186-234-NP-1

EQ Equip No: G080-90-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS Plant I.D. Number: JX-100C Component: ELECTRICAL PENETRATION Manufacturer: GE Model Number: NS02-II CANNISTER TYPE Purchase Order Number: E-001 Function/Service: PRIMARY CONTAINMENT ISOLATION/RADIATION MONITORING Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 761'-4"	Operating Time	30 DAYS	RAD DOSE FROM CALCULATION 211-015 REV. 1
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	2.6 E07	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS Plant I.D. Number: JX-100D Component: ELECTRICAL PENETRATION Manufacturer: GE Model Number: NS02-II CANNISTER TYPE Purchase Order Number: E-001 Function/Service: PRIMARY CONTAINMENT ISOLATION/RADIATION MONITORING Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 761'-4"	Operating Time	30 DAYS	RAD DOSE FROM CALCULATION 211-015 REV. 1
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	2.6 E07	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Loc Dwg: M41 Mfr Model Ref: GE SPEC 175A9005, CHRON 6899							
Environment: HARSH EQ Sys No: 32 P&ID: NA Elec Scheme: E807 VDR ID: 238X701RSG1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Loc Dwg: M41 Mfr Model Ref: GE SPEC 175A9005, CHRON 6899							
Environment: HARSH EQ Sys No: 32 P&ID: NA Elec Scheme: E807 VDR ID: 238X701RSG1							

G080-98

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

Sheet No: 114
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 Date: 09/22/83

11186-234-NP-1

EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: PRESSURE TRANSMITTER Manufacturer: GE Model Number: GE 555-111DEAA4WCB NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE NOTE (1)	---		---		SEE NOTE (1)
	Temperature (°F)	104		SEE GENERAL NOTE 4	---		---		SEE GENERAL NOTE 4
	Pressure (PSIG)	0		SEE GENERAL NOTE 4	---		---		SEE GENERAL NOTE 4
	Relative Humidity (%)	100		SEE GENERAL NOTE 4	---		---		SEE GENERAL NOTE 4
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	8.9 E05		SEE NOTE (1)	---		---		SEE NOTE (1)
	Aging	40 YEARS		SEE NOTE (1)	---		---		SEE NOTE (1)
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
	1 . SEE ACTION ITEM 34.

G080-98

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: G080-98-001

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 115
 Revision: 2
 Date: 09/22/83

11186-234-NP-1

EQ Equip No: G080-98-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PT-8404A Component: PRESSURE TRANSMITTER Manufacturer: GE Model Number: GE 555-111DEAA4WCB Purchase Order Number: APED Function/Service: POST ACCIDENT MONITORING/MSIV LEAKAGE CONTROL SYSTEM PRESSURE Accuracy: Spec: 0.3 PSI Location: A CRD RR/1C14 Floor Elevation: 757' - 6"	Operating Time	30 DAYS	
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.9 E05	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PT-8404B Component: PRESSURE TRANSMITTER Manufacturer: GE Model Number: GE 555-111DEAA4WCB Purchase Order Number: APED Function/Service: POST ACCIDENT MONITORING/MSIV LEAKAGE CONTROL SYSTEM PRESSURE Accuracy: Spec: 0.3 PSI Location: A CRD RR/1C14 Floor Elevation: 757' -6"	Operating Time	30 DAYS	
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.9 E05	
	Aging	40 YEARS	
	Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence		NA

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M184/F8 Loc Dwg: M405-2/E5 Elec Scheme: E122/37 VDR ID: NA Mfr Model Ref: V.P. APED-B21-33							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M184/F8 Loc Dwg: M405-2/E5 Elec Scheme: E122/37 VDR ID: NA Mfr Model Ref: V.P. APED-B21-33							

GO80-98
 Owner: IDWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: GO80-98-003

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 116
 Revision: 2
 Date: 09/22/83

11186-234-NP-1

EQ Equip No: GO80-98-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PT-8404C Component: PRESSURE TRANSMITTER Manufacturer: GE Model Number: GE 555-111DEAA4WCB Purchase Order Number: APED Function/Service: POST ACCIDENT MONITORING/MSIV LEAKAGE CONTROL SYSTEM PRESSURE Accuracy: Spec: 0.3 PSI Location: A CRD RR/1C14 Floor Elevation: 757' -6"	Operating Time	30 DAYS	
	Temperature (*F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.9 EO5	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PT-8404D Component: PRESSURE TRANSMITTER Manufacturer: GE Model Number: GE 555-111DEAA4WCB Purchase Order Number: APED Function/Service: POST ACCIDENT MONITORING/MSIV LEAKAGE CONTROL SYSTEM PRESSURE Accuracy: Spec: 0.3 PSI Location: A CRD RR/1C145 Floor Elevation: 757' -6"	Operating Time	30 DAYS	
	Temperature (*F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.9 EO5	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M184/F8 Loc Dwg: M405-2/E5 Elec Scheme: E122/32 VDR ID: NA Mfr Model Ref: V.P. APED-B21-33							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M184/F8 Loc Dwg: M405-2/E5 Elec Scheme: E122/37 VDR ID: NA Mfr Model Ref: V.P. APED-B21-33							

G315-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

Sheet No: 117
 Revision 2
 Date: 09/22/83

11186-234-NP-1

EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: TEMPERATURE ELEMENT (RTD) Manufacturer: GULTON INDUSTRIES Model Number: TCA-0646 NUREG 0588 Applicable: NO Accuracy: Demo: NONE	Operating Time	30 DAYS		SEE GEN NOTE 4	004		---	---	NONE
	Temperature (*F)	104		SEE GEN NOTE 7	004		---	---	NONE
	Pressure (PSIG)	0		SEE GEN NOTE 7	004		---	---	NONE
	Relative Humidity (%)	100		SEE GEN NOTE 7	004		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	3.5 E08		5.0 E10	005		REF. A	ANALYSIS	NONE
	Aging	40 YEARS		40 YEARS ()	004		REF. A	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . AGING EVALUATION FORM G315-01 REV 1, DATED 8/11/83 (CHRON 12962). (REFERENCE SUMMARIZED IN SECTION VIII.G OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENT ON TER EQUIPMENT ITEM 98.)	

G315-01
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: G315-01-003

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 118
 Revision: 2
 Date: 09/22/83

11186-234-NP-1

EQ Equip No: G315-01-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: TE-5805U Component: TEMPERATURE ELEMENT (RTD) Manufacturer: GULTON INDUSTRIES Model Number: TCA-0646 Purchase Order Number: M-73 Function/Service: MITIGATE RADIOACTIVE RELEASE/INPUT TO SGTS HEATER DELTA TEMPERATURE CONTROLLER Accuracy: Spec: NA Location: SGT ROOM Floor Elevation: 786'-0"	Operating Time	30 DAYS	RAD DOSE IS BASED ON A DISTANCE OF 12.5 FT FROM SGT FILTER SURFACE (CALC 221-004 REV. 2)
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.5 E06	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: TE-5805V Component: TEMPERATURE ELEMENT (RTD) Manufacturer: GULTON INDUSTRIES Model Number: TCA-0646 Purchase Order Number: M-73 Function/Service: MITIGATE RADIOACTIVE RELEASE/INPUT TO SGTS HEATER DELTA TEMPERATURE CONTROLLER Accuracy: Spec: NA Location: SGT ROOM Floor Elevation: 786'-0"	Operating Time	30 DAYS	RAD DOSE IS AT SURFACE OF SGT FILTER (CALC 221-004 REV. 2)
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	3.5 E08	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E315/G5 Mfg Model Ref: V.P. 7884-M73-40-4, WALKDOWN 8/81, SHEET 225							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E315/G4 Mfg Model Ref: V.P. 7884-M73-40-4, WALKDOWN 8/81, SHEET 226							

G315-01

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: G315-01-005

EQUIPMENT QUALIFICATION REPORT
DATA SHEET

Sheet No. 119

Revision: 2

Date: 09/22/83

11186-234-NP-1

EQ Equip No: G315-01-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT	Operating Time	30 DAYS	RAD DOSE IS BASED ON A DISTANCE OF 12.5 FT FROM THE SGT FILTER (CALC 221-004 REV. 2)
Plant I.D. Number: TE-5805W Component: TEMPERATURE ELEMENT (RTD) Manufacturer: GULTON INDUSTRIES	Temperature (°F)	104	
Model Number: TCA-0646	Pressure (PSIG)	0	
Purchase Order Number: M-73	Relative Humidity (%)	100	
Function/Service: MITIGATE RADIOACTIVE RELEASE/INPUT TO SGTS HEATER DELTA TEMPERATURE CONTROLLER Accuracy: Spec:	Chemical Spray	NA	
NA Location: SGT ROOM	Seismic	NA	
Floor Elevation: 786' -0"	Radiation (Rad)	5.5 E06	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT	Operating Time	30 DAYS	RAD DOSE IS AT SURFACE OF SGT FILTER (CALC 221-004 REV. 2)
Plant I.D. Number: TE-5805X Component: TEMPERATURE ELEMENT (RTD) Manufacturer: GULTON INDUSTRIES	Temperature (°F)	104	
Model Number: TCA-0646	Pressure (PSIG)	0	
Purchase Order Number: M-73	Relative Humidity (%)	100	
Function/Service: MITIGATE RADIOACTIVE RELEASE/INPUT TO SGTS HEATER DELTA TEMPERATURE CONTROLLER Accuracy: Spec:	Chemical Spray	NA	
NA Location: SGT ROOM	Seismic	NA	
Floor Elevation: 786' -0"	Radiation (Rad)	3.5 E08	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins:	Environment:		EQ Sys No:		P&ID:		
1974	HARSH		10		M158/C5		
Loc Dwg: E315/F5	Elec Scheme: E113/113		VDR ID: NONE				
Mfr Model Ref:	V.P. 7884-M73-40-4, WALKDOWN 8/81, SHEET 227						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 10		P&ID: M158/C4	
Loc Dwg: E315/F4	Elec Scheme: E113/114			VDR ID: NONE			
Mfr Model Ref:	V.P. 7884-M73-40-4, WALKDOWN 8/81, SHEET 228						

I045-02

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

Sheet No: 120
 Revision 2
 Date: 09/22/83

11186-234-NP-1

EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: HEATER Manufacturer: INDUSTRIAL ENG.& EQUIPMENT CO. Model Number: TFZCP15900 SEE NOTE 1 NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GENERAL NOTE 4	001		---	---	NONE
	Temperature (*F)	104		SEE GENERAL NOTE 7	001		---	---	NONE
	Pressure (PSIG)	0		SEE GENERAL NOTE 7	001		---	---	NONE
	Relative Humidity (%)	100		SEE GENERAL NOTE 7	001		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	9.0 E06		1.2 E07	001		REF. A	ANALYSIS	NONE
	Aging	40 YEARS		40 YEARS	001		REF. A	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . AGING EVALUATION FORM I045-02 REV 0, DATED 9/10/82 (CHRON 12755).	1 . CATALOG SERIES TFZ AND CERTIFIED PRINT NO. 15900 WERE USED AS MODEL NUMBER IN THE ABSENCE OF A DOCUMENTED MODEL NUMBER.

I045-02

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: I045-02-001

EQUIPMENT QUALIFICATION REPORT
DATA SHEET

Sheet No. 121

Revision: 2

Date: 09/22/83

11186-234-NP-1

EQ Equip No: I045-02-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT	Operating Time	30 DAYS	RAD DOSE BASED ON A DISTANCE OF 10 FEET FROM SGT FILTER (CALC 221-004 REV. 2)
Plant I.D. Number: 1S-1061A Component: HEATER	Temperature (°F)	104	
Manufacturer: INDUSTRIAL ENG. & EQUIPMENT CO. Model Number: TFZCP15900 SEE NOTE 1 Purchase Order Number: M-081	Pressure (PSIG)	0	
Function/Service: MITIGATE RADIOACTIVE RELEASE/MAINTAIN SGTS HUMIDITY CONTROL	Relative Humidity (%)	100	
Accuracy: Spec: NA Location: SGT ROOM	Chemical Spray	NA	
Floor Elevation: 786' -0"	Seismic	NA	
	Radiation (Rad)	9.0 EO6	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT	Operating Time	30 DAYS	RAD DOSE BASED ON A DISTANCE OF 10 FEET FROM SGT FILTER (CALC 221-004 REV. 2)
Plant I.D. Number: 1S-1061B Component: HEATER	Temperature (°F)	104	
Manufacturer: INDUSTRIAL ENG. & EQUIPMENT CO. Model Number: TFZCP15900 SEE NOTE 1 Purchase Order Number: M-081	Pressure (PSIG)	0	
Function/Service: MITIGATE RADIOACTIVE RELEASE/MAINTAIN SGTS HUMIDITY CONTROL	Relative Humidity (%)	100	
Accuracy: Spec: NA Location: SGT ROOM	Chemical Spray	NA	
Floor Elevation: 786' -0"	Seismic	NA	
	Radiation (Rad)	9.0 EO6	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E315/G5 Mfr Model Ref: V.P. 7884-M81-12-1							
Environment: HARSH Elec Scheme: E113/13 VDR ID: NONE							
EQ Sys No: 10 P&ID: M158/G5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E315/F5 Mfr Model Ref: V.P. 7884-M81-12-1							
Environment: HARSH Elec Scheme: E113/13 VDR ID: NONE							
EQ Sys No: 10 P&ID: M158/C5							

I204-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: LEVEL TRANSMITTER Manufacturer: ITT BARTON Model Number: 763 NUREG 0588 Applicable: YES Accuracy: Demo: 0.5%	Operating Time	30 DAYS		30 DAYS	007		REF. A	TYPE TEST	NONE
	Temperature (°F)	277		420	007		REF. A,	TYPE TEST	NONE
	Pressure (PSIG)	1.2		75	007		REF. A	TYPE TEST	NONE
	Relative Humidity (%)	100		100	007		REF. A	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.3 E07		2.0 E08	007		REF. A	TYPE TEST	NDNE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	007		REF. A,B	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . ITT BARTON TEST REPORT R3-763-6 (CHRON 9636) DATED 9/82 (V.P. 11186-212-J-37351-21-1) B . AGING EVALUATION FORM I204-01 REV. 1, DATED 8/10/83 (CHRON 12964). (REFERENCES SUMMARIZED IN SECTION VII.C OF SEMIANNUAL EQ	1 . QUALIFIED LIFE OF 40 YEARS IS BASED ON REPLACEMENT OF ETHYLENE PROPYLENE O-RINGS AT 20 YEAR INTERVALS.

I204-O1

Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
Docket: 50-331

EQUIPMENT QUALIFICATION REPORT

Sheet No. 123

Revision: 2

Date: 09/22/83

11186-234-NP-1

DOCUMENTATION REFERENCES:	NOTES:
<p>REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 55.)</p>	

I204-01
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: I204-01-007

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 124
 Revision: 2
 Date: 09/22/83

11186-234-NP-1

EQ Equip No: I204-01-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: LT-4396A Component: LEVEL TRANSMITTER Manufacturer: ITT BARTON Model Number: 763 Purchase Order Number: DCR-933 Function/Service: POST ACCIDENT MONITORING/TORUS WATER LEVEL DETECTION Accuracy: Spec: 0.5% Location: TORUS ROOM NORTH Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: LT-4396B Component: LEVEL TRANSMITTER Manufacturer: ITT BARTON Model Number: 763 Purchase Order Number: DCR-933 Function/Service: POST ACCIDENT MONITORING/TORUS WATER LEVEL DETECTION Accuracy: Spec: 0.5% Location: TORUS ROOM NORTH Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 36 P&ID: M143/B6 Loc Dwg: E316/F6 Elec Scheme: E122/19A VDR ID: NONE Mfr Model Ref: GE SPEC 22A7898							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 36 P&ID: M143/B4 Loc Dwg: E316/E3 Elec Scheme: E122/19A VDR ID: NONE Mfr Model Ref: GE SPEC 22A7898							

I204-02

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

Sheet No: 125
 Revision 2
 Date: 09/22/83

11186-234-NP-1

EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: LEVEL/PRESSURE TRANSMITTER Manufacturer: ITT BARTON Model Number: 764 NUREG 0588 Applicable: YES Accuracy: Demo: 0.5%	Operating Time	30 DAYS		30 DAYS	001		REF. A	TYPE TEST/ ANALYSIS	NONE
	Temperature (°F)	277		420	005		REF. A	TYPE TEST	NONE
	Pressure (PSIG)	1.2		75	005		REF. A	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.3 E07		2.0 E08	005		REF. A	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	001		REF. A,B	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . ITT BARTON TEST REPORT R3-764-9 (CHRON 9636) DATED 10/82 (V.P. 11186-212-J-37351-22-1). B . AGING EVALUATION FDRM I204-02 REV. 1, DATED 8/10/83 (CHRON 12965). (REFERENCES SUMMARIZED IN SECTION IX.C OF SEMIANNUAL EQ	1 . QUALIFIED LIFE OF 40 YEARS IS BASED ON REPLACEMENT OF ETHYLENE PROPYLENE O-RINGS AT 20 YEAR INTERVALS.

I204-02

Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
Docket: 50-331

EQUIPMENT QUALIFICATION REPORT

Sheet No. 126

Revision: 2

Date: 09/22/83

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DOCUMENTATION REFERENCES:

REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT
ITEMS 58 AND 59.)

NOTES:

I204-02

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: I204-02-001

EQUIPMENT QUALIFICATION REPORT
DATA SHEET

Sheet No. 127

Revision: 2

Date: 09/22/83

11186-234-NP-1

EQ Equip No: I204-02-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PT-4398A Component: LEVEL/PRESSURE TRANSMITTER Manufacturer: ITT BARTON Model Number: 764 Purchase Order Number: DCR-933 Function/Service: POST ACCIDENT MONITORING/DRYWELL PRESSURE INDICATOR Accuracy: Spec: 0.5% Location: RB-S Floor Elevation: 757' -6"	Operating Time	30 DAYS	
	Temperature (°F)	90	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	4.7 E05	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PT-4398B Component: LEVEL/PRESSURE TRANSMITTER Manufacturer: ITT BARTON Model Number: 764 Purchase Order Number: DCR-933 Function/Service: POST ACCIDENT MONITORING/DRYWELL PRESSURE INDICATOR Accuracy: Spec: 0.5% Location: RB-N Floor Elevation: 786' -0"	Operating Time	30 DAYS	
	Temperature (°F)	90	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	4.7 E05	
	Aging	40 YEARS	
	Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence		NA

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Loc Dwg: E319/E6 Mfr Model Ref: GE SPEC 22A7885							
Environment: HARSH EQ Sys No: 36 P&ID: M143/F7 Elec Scheme: E124/3 VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Loc Dwg: E320/C4 Mfr Model Ref: GE SPEC 22A7885							
Environment: HARSH EQ Sys No: 36 P&ID: M143/D5 Elec Scheme: E124/3 VDR ID: NONE							

I204-02
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: I204-02-005

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 128
 Revision: 2
 Date: 09/22/83

11186-234-NP-1

EQ Equip No: I204-02-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: LT-4397A Component: LEVEL/PRESSURE TRANSMITTER Manufacturer: ITT BARTON Model Number: 764 Purchase Order Number: DCR-933 Function/Service: POST ACCIDENT MONITORING/TORUS WATER LEVEL DETECTION Accuracy: Spec: 0.5% Location: TORUS ROOM NORTH Floor Elevation: 716'-9"	Operating Time	30 DAYS	
	Temperature (*F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: LT-4397B Component: LEVEL/PRESSURE TRANSMITTER Manufacturer: ITT BARTON Model Number: 764 Purchase Order Number: DCR-933 Function/Service: POST ACCIDENT MONITORING/TORUS WATER LEVEL DETECTION Accuracy: Spec: 0.5% Location: TORUS ROOM NORTH Floor Elevation: 716'-9"	Operating Time	30 DAYS	
	Temperature (*F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 36 P&ID: M143/B5 Loc Dwg: E316/F6 Elec Scheme: E122/20 VDR ID: NONE Mfr Model Ref: GE SPEC 22A7726							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 36 P&ID: M143/B5 Loc Dwg: E316/E3 Elec Scheme: E122/20 VDR ID: NONE Mfr Model Ref: GE SPEC 22A7726							

I204-04

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Oocket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: FLOW INDICATING SWITCH Manufacturer: ITT BARTON Model Number: 289 NUREG 0588 Applicable: NO Accuracy: Demo: 1.5%	Operating Time	30 DAYS		SEE GEN NOTE 4	001		---	---	NONE
	Temperature (°F)	140		212 SEE GEN NOTE 7	001		REF. B	TYPE TEST	NONE
	Pressure (PSIG)	0		SEE GEN NOTE 7	001		---	---	NONE
	Relative Humidity (%)	100		100 SEE GEN NOTE 7	001		REF. B	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	2.8 E06		3.0 E06	002		REF. A,C	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	001		REF. C	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . ITT BARTON REPORT R3-288A-1 DATED MAY, 1980 (CHRON 7510). B . BWR EQUIPMENT QUALIFICATION SUMMARY REPORT QSR-029-A-01 DATED 10/9/80 (CHRON 7719). C . AGING EVALUATION FORM I204-04 REV. 2, DATED 8/13/83 (CHRON 12973).	1 . 40 YEAR QUALIFIED LIFE REQUIRES COMPARING INSTRUMENT CALIBRATION DATA (AT APPROXIMATELY 18 MONTH INTERVALS) TO PREVIOUS CALIBRATION DATA; IF THE SETPOINT HAS DRIFTED MORE THAN 1.5% FULL SCALE IN THE SAME DIRECTION FOR THREE CONSECUTIVE CHECKS (SPAN 36 MONTHS), THE SWITCH SHOULD BE REPLACED WITHIN THE FOLLOWING 18 MONTHS.

I204-04

Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
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DOCUMENTATION REFERENCES:	NOTES:
<p>(REFERENCES SUMMARIZED IN SECTION VI.C AND VII.B OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 49 AND 50.)</p>	

I204-04
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: I204-04-001

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 131
 Revision: 2
 Date: 09/22/83

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EQ Equip No: I204-04-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CORE SPRAY Plant I.D. Number: FIS-2111 Component: FLOW INDICATING SWITCH Manufacturer: ITT BARTON Model Number: 289 Purchase Order Number: APED Function/Service: REACTOR CORE COOLING/ CORE SPRAY PUMP 1P-211A DISCHARGE LOW FLOW Accuracy: Spec: 2% Location: SE CRNR RM/1C-123 Floor Elevation: 716'-9" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	REQUIRED RADIATION DOSE IS BASED ON DISTANCE FROM MAJOR RADIATION SOURCES (AEF I204-04)
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.6 E06	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CORE SPRAY Plant I.D. Number: FIS-2131 Component: FLOW INDICATING SWITCH Manufacturer: ITT BARTON Model Number: 289 Purchase Order Number: APED Function/Service: REACTOR CORE COOLING/ CORE SPRAY PUMP 1P-211B DISCHARGE LOW FLOW Accuracy: Spec: 2% Location: NW CRNR RM/1C-124 Floor Elevation: 716'-9" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	REQUIRED RADIATION DOSE IS BASED ON DISTANCE FROM MAJOR RADIATION SOURCES (AEF I204-04)
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.8 E06	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 08 P&ID: M121/F5 Loc Dwg: E317/E3 Elec Scheme: E121/6 VDR ID: E21-N006A Mfr Model Ref: V.P. APED E21-10 SHEET 4							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 08 P&ID: M121/G5 Loc Dwg: E316/E7 Elec Scheme: E121/6 VDR ID: E21-N006B Mfr Model Ref: V.P. APED E21-10 SHEET 4							

I204-04
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: I204-04-004

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 132
 Revision: 2
 Date: 09/22/83

11186-234-NP-1

EQ Equip No: I204-04-005

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: PDIS-1971A Component: FLOW INDICATING SWITCH Manufacturer: ITT BARTON Model Number: 289 Purchase Order Number: APED Function/Service: REACTOR CORE COOLING/ RHR HEAT EXCHANGER A LOW DISCHARGE FLOW BYPASS TO SUPPRES- SION POOL Accuracy: Spec: 5% Location: SE CRNR RM Floor Elevation: 716' -9" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	REQUIRED RADIATION DOSE IS BASED ON DISTANCE FROM MAJOR RADIATION SOURCES (AEF I204-04)
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.6 E06	
	Aging	40 YEARS	
Flood Level	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: PDIS-1971B Component: FLOW INDICATING SWITCH Manufacturer: ITT BARTON Model Number: 289 Purchase Order Number: APED Function/Service: REACTOR CORE COOLING/ RHR HEAT EXCHANGER B LOW DISCHARGE FLOW BYPASS TO SUPPRESSION POOL Accuracy: Spec: 5% Location: NW CRNR RM Floor Elevation: 716' -9" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	REQUIRED RADIATION DOSE IS BASED ON DISTANCE FROM MAJOR RADIATION SOURCES (AEF I204-04)
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.8 E06	
	Aging	40 YEARS	
Flood Level	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E317/E3 Mfr Model Ref: V.P. APED E11-14 SHEET 16 Environment: HARSH Elec Scheme: E121/54 EQ Sys No: 09 P&ID: M120/F7 VDR ID: E11-NO21A							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E316/E7 Mfr Model Ref: V.P. APED E11-14 SHEET 16 Environment: HARSH Elec Scheme: E121/54 EQ Sys No: 09 P&ID: M120/F7 VDR ID: E11-NO21B							

I204-04

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: I204-04-008

EQUIPMENT QUALIFICATION REPORT
DATA SHEET

Sheet No. 133

Revision: 2

Date: 09/22/83

11186-234-NP-1

EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL	Operating Time	30 DAYS	
Plant I.D. Number: PS-4348 Component:	Temperature (°F)	90	
FLOW INDICATING SWITCH Manufacturer:	Pressure (PSIG)	0	
ITT BARTON	Relative Humidity (%)	100	
Model Number: 289	Chemical Spray	NA	
Purchase Order Number: DCR-568	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/TORUS NITROGEN PURGE ISOLA- TION ON HIGH TORUS PRESSURE Accuracy: Spec:	Radiation (Rad)	4.7 E05	
1.5% Location: RB-N	Aging	40 YEARS	
Floor Elevation: 757' -6"	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (°F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:	Submergence		
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NO	NA

Qual Life Begins:	Environment:	EQ Sys No:	P&ID:
1979	HARSH	29	M143/C4
Loc Dwg: E318/A5	Elec Scheme: E122/12	VDR ID: NONE	
Mfr Model Ref: CHRON 7655 AND 7636			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM

Qual Life Begins:	Environment:	EQ Sys No:	P&ID:
Loc Dwg:	Elec Scheme:	VDR ID:	
Mfr Model Ref:			

I204-05

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT
EVALUATION SHEET

Sheet No: 134

Revision 2

Date: 09/22/83

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: DIFFERENTIAL PRESSURE TRANSMITTER Manufacturer: ITT BARTON Model Number: 368 NUREG 0588 Applicable: NO Accuracy: Demo: 0.5%	Operating Time	30 DAYS		SEE GEN NOTE 4	008		---	---	NONE
	Temperature (°F)	140		SEE GEN NOTE 7	008		---	---	NONE
	Pressure (PSIG)	0		SEE GEN NOTE 7	008		---	---	NONE
	Relative Humidity (%)	100		SEE GEN NOTE 7	008		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	5.9 E06		SEE NOTE (1)	008		---	---	SEE NOTE (1)
	Aging	40 YEARS		SEE NOTE (1)	008		---	---	SEE NOTE (1)
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
	1 . SEE ACTION ITEM 36.

I204-05

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: I204-05-008

EQUIPMENT QUALIFICATION REPORT
DATA SHEET

Sheet No. 135

Revision: 2

Date: 09/22/83

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EQ Equip No: I204-05-009

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: FT-1971A Component: DIFFERENTIAL PRESSURE TRANSMITTER Manufacturer: ITT BARTON Model Number: 368 Purchase Order Number: APED Function/Service: POST ACCIDENT MONITORING/LPCI AND RHR SYSTEM FLOW Accuracy: Spec: +-450 GPM Location: SE CRNR RM/1C129A Floor Elevation: 716' -9"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: FT-1971B Component: DIFFERENTIAL PRESSURE TRANSMITTER Manufacturer: ITT BARTON Model Number: 368 Purchase Order Number: APED Function/Service: POST ACCIDENT MONITORING/LPCI AND RHR SYSTEM FLOW Accuracy: Spec: +-450 GPM Location: NW CRNR RM/1C129B Floor Elevation: 716' -9"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M120/E7 Loc Dwg: M405-1/C5 Elec Scheme: E121/57 VDR ID: NONE Mfr Model Ref: LATER							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M119/E3 Loc Dwg: M405-1/E7 Elec Scheme: E121/57 VDR ID: NONE Mfr Model Ref: LATER							

I204-06
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: DIFFERENTIAL PRESSURE INDICATING SWITCH Manufacturer: ITT BARTON Model Number: 288A NUREG 0588 Applicable: NO Accuracy: Demo: 1%	Operating Time	30 DAYS		SEE GENERAL NOTE 4	001		---	---	NONE
	Temperature (°F)	104		SEE GENERAL NOTE 7	001		---	---	NONE
	Pressure (PSIG)	0		SEE GENERAL NOTE 7	001		---	---	NONE
	Relative Humidity (%)	100		SEE GENERAL NOTE 7	001		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	2.9 E05		3.0 E06	001		REF. A	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	001		REF. B	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . ITT BARTON REPORT R3-288A-1 DATED MAY, 1980 (CHRON 7510). B . AGING EVALUATION FORM I204-06 REV. 1, DATED 8/13/83 (CHRON 12974). (REFERENCES SUMMARIZED IN SECTION VIII.D OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON EQUIPMENT	1 . 40 YEAR QUALIFIED LIFE REQUIRES COMPARING INSTRUMENT CALIBRATION DATA (AT APPROXIMATELY 18 MONTH INTERVALS) TO PREVIOUS CALIBRATION DATA; IF THE SETPOINT HAS DRIFTED MORE THAN 1.5% FULL SCALE IN THE SAME DIRECTION FOR THREE CONSECUTIVE CHECKS (SPAN 36 MONTHS), THE SWITCH SHOULD BE REPLACED WITHIN THE FOLLOWING 18 MONTHS.

I204-06

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DOCUMENTATION REFERENCES:	NOTES:
ITEM 65.)	

I204-06
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: I204-06-001

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EQ Equip No: I204-06-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL	Operating Time	30 DAYS	
Plant I.D. Number: PDIS-4304 Component:	Temperature (°F)	104	
DIFFERENTIAL PRESSURE INDICATING SWITCH Manufacturer:	Pressure (PSIG)	0	
ITT BARTON	Relative Humidity (%)	100	
Model Number: 288A	Chemical Spray	NA	
Purchase Order Number: M-167	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/VACUUM BREAKER HIGH DIFFER- ENTIAL PRESSURE	Radiation (Rad)	2.9 E05	
Accuracy: Spec: 1.5% Location: NE CRNR RM	Aging	40 YEARS	
Floor Elevation: 735' - 7"	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL	Operating Time	30 DAYS	
Plant I.D. Number: PDIS-4305 Component:	Temperature (°F)	104	
DIFFERENTIAL PRESSURE INDICATING SWITCH Manufacturer:	Pressure (PSIG)	0	
ITT BARTON	Relative Humidity (%)	100	
Model Number: 288A	Chemical Spray	NA	
Purchase Order Number: M-167	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/VACUUM BREAKER HIGH DIFFER- ENTIAL PRESSURE	Radiation (Rad)	2.9 E05	
Accuracy: Spec: 1.5% Location: NE CRNR RM	Aging	40 YEARS	
Floor Elevation: 735' - 7"	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M143/B7 Loc Dwg: E316/F3 Elec Scheme: E122/23 VDR ID: NONE Mfr Model Ref: P.O. M-167-3							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M143/B8 Loc Dwg: E316/F3 Elec Scheme: E122/23 VDR ID: NONE Mfr Model Ref: P.O. M167-3							

K080-01

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: 5 KV CABLE Manufacturer: KERITE Model Number: HT WITH NS JACKET NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		100 DAYS	001		REF. A,C	TYPE TEST	NONE
	Temperature (°F)	300		340	001		REF. A,C	TYPE TEST	NONE
	Pressure (PSIG)	4.6		104	001		REF. A,C	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A,C	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	2.1 E07		2.0 E08	001		REF. A,C	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	001		REF. B,C	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	NDNE

DOCUMENTATION REFERENCES	NOTES
A . LOCA QUALIFICATION TEST OF KERITE 5KV HTK/HTNS NONSHIELDED POWER CABLES DATED 2/17/81 (CHRON 7591). TEST PROFILE IS PARAGRAPH 4, PAGE 2 OF THIS REPORT. B . AGING EVALUATION FORM K080-01 DATED 6/18/82 (CHRON 8108). C . SECTION VIII.H OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 107.	1 . QUALIFIED LIFE OF 40 YEARS ASSUMES CONTINUOUS AMBIENT TEMPERATURE OF LESS THAN 240F.

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS Plant I.D. Number: CABLE-POWER-KER Component: 5 KV CABLE Manufacturer: KERITE Model Number: HT WITH NS JACKET Purchase Order Number: E-018 & IE P.O. 21045 Function/Service: SUPPORT/SUPPLY 5KV POWER TO EQUIPMENT Accuracy: Spec: NA Location: OUTSIDE DRYWELL Floor Elevation: VARIOUS Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	THE REQUIRED ENVIRONMENT IS ENVELOPE OF WORST CASE CONDITIONS OUTSIDE DRYWELL. TEMP AND RADIATION FROM STEAM TUNNEL, PRESS FROM TRAVSG INCORE PROBE ROOM. NOT USED IN SGT'S ROOM.
	Temperature (°F)	300	
	Pressure (PSIG)	4.6	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.1 EO7	
	Aging	40 YEARS	
Flood Level	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: Plant I.D. Number: Component: Manufacturer: Model Number: Purchase Order Number: Function/Service: Accuracy: Spec: Location: Floor Elevation: Flood Level Elevation: Above Flood Level: Yes: No:	Operating Time		
	Temperature (°F)		
	Pressure (PSIG)		
	Relative Humidity (%)		
	Chemical Spray		
	Seismic		
	Radiation (Rad)		
	Aging		
Flood Level	Submergence		

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1978 Loc Dwg: NA Mfr Model Ref: P.O. E-018BC, REVISION 3 Environment: HARSH EQ Sys No: 32 Elec Scheme: NA P&ID: NA VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins: Loc Dwg: Mfr Model Ref: Environment: EQ Sys No: Elec Scheme: P&ID: VDR ID:							

L130-02

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: TEMPERATURE ELEMENT (RTD) Manufacturer: LEEDS & NORTHRUP Model Number: 8920-404-00-3-21 NUREG 0588 Applicable: NO Accuracy: Demo: NONE	Operating Time	30 DAYS		SEE NOTE (1)	005		---	---	NONE
	Temperature (*F)	SEE GEN NOTE 6		SEE NOTE (1)	005		---	---	NONE
	Pressure (PSIG)	SEE GEN NOTE 6		SEE NOTE (1)	005		---	---	NONE
	Relative Humidity (%)	100		SEE NOTE (1)	005		---	---	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	005		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	4.3 E07		SEE NOTE (1)	005		---	---	NONE
	Aging	40 YEARS		SEE NOTE (1)	005		---	---	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
	1 . SEE ACTION ITEM 33.

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EQ Equip No: L130-02-006

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EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: TE-4386E Component: TEMPERATURE ELEMENT (RTD) Manufacturer: LEEDS & NORTHRUP Model Number: 8920-404-00-3-21 Purchase Order Number: FIELD Function/Service: POST ACCIDENT MONITORING/ DRYWELL TEMPERATURE Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 742' - 9" Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: TE-4386F Component: TEMPERATURE ELEMENT (RTD) Manufacturer: LEEDS & NORTHRUP Model Number: 8920-404-00-3-21 Purchase Order Number: FIELD Function/Service: POST ACCIDENT MONITORING/ DRYWELL TEMPERATURE Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 742' - 9" Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M143/D6 Loc Dwg: E331/C3 Elec Scheme: E122/20 VDR ID: NONE Mfr Model Ref: DATA SHEET M436							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M143/D6 Loc Dwg: E331/F6 Elec Scheme: E122/20 VDR ID: NONE Mfr Model Ref: DATA SHEET M436							

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EQ Equip No: L130-02-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: TE-4386G Component: TEMPERATURE ELEMENT (RTD) Manufacturer: LEEDS & NORTHRUP Model Number: 8920-404-00-3-21 Purchase Order Number: FIELD Function/Service: POST ACCIDENT MONITORING/ DRYWELL TEMPERATURE Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 757' - 6"	Operating Time	30 DAYS	
	Temperature (*F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: TE-4386H Component: TEMPERATURE ELEMENT (RTD) Manufacturer: LEEDS & NORTHRUP Model Number: 8920-404-00-3-21 Purchase Order Number: FIELD Function/Service: POST ACCIDENT MONITORING/ DRYWELL TEMPERATURE Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 757' - 6"	Operating Time	30 DAYS	
	Temperature (*F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M143/D6 Loc Dwg: E329/B4 Elec Scheme: E122/20 VDR ID: NONE Mfr Model Ref: DATA SHEET M436							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M143/D6 Loc Dwg: E329/G4 Elec Scheme: E122/20 VDR ID: NONE Mfr Model Ref: DATA SHEET M436							

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EQ Equip No: L130-02-010

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: TE-4386J Component: TEMPERATURE ELEMENT (RTD) Manufacturer: LEEDS & NORTHRUP Model Number: 8920-404-00-3-21 Purchase Order Number: FIELD Function/Service: POST ACCIDENT MONITORING/ DRYWELL TEMPERATURE Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 761'-4"	Operating Time	30 DAYS	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
	Flood Level	Submergence		NA
Elevation: 744'-0"			
Above Flood Level:			
Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: TE-4386K Component: TEMPERATURE ELEMENT (RTD) Manufacturer: LEEDS & NORTHRUP Model Number: 8920-404-00-3-21 Purchase Order Number: FIELD Function/Service: POST ACCIDENT MONITORING/ DRYWELL TEMPERATURE Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 761' - 4" Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (*F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Loc Dwg: E330/D2 Mfr Model Ref: DATA SHEET M436 Environment: HARSH Elec Scheme: E122/20 EQ Sys No: 36 P&ID: M143/E6 VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Loc Dwg: E330/D6 Mfr Model Ref: DATA SHEET M436 Environment: HARSH Elec Scheme: E122/20 EQ Sys No: 36 P&ID: M143/E6 VDR ID: NONE							

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EQ Equip No: L130-02-012

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: TE-4386L Component: TEMPERATURE ELEMENT (RTD) Manufacturer: LEEDS & NORTHRUP Model Number: 8920-404-00-3-21 Purchase Order Number: FIELD Function/Service: POST ACCIDENT MONITORING/ DRYWELL TEMPERATURE Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 761'-4"	Operating Time	30 DAYS	
	Temperature (*F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: TE-4386M Component: TEMPERATURE ELEMENT (RTD) Manufacturer: LEEDS & NORTHRUP Model Number: 8920-404-00-3-21 Purchase Order Number: FIELD Function/Service: POST ACCIDENT MONITORING/ DRYWELL TEMPERATURE Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 761'-9"	Operating Time	30 DAYS	
	Temperature (*F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M143/E6 Loc Dwg: E330/F5 Elec Scheme: E122/20 VDR ID: NONE Mfr Model Ref: DATA SHEET M436							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M143/D6 Loc Dwg: E331/D4 Elec Scheme: E122/20 VDR ID: NONE Mfr Model Ref: DATA SHEET M436							

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	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-O, AC-CLASS B NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	002		REF. A,C,D G I	TYPE TEST/ ANALYSIS	NONE
	Temperature (°F)	277		SEE NOTE (1)	002		REF. A,G,I	TYPE TEST/ ANALYSIS	NONE
	Pressure (PSIG)	1.2		SEE NOTE (2)	002		REF. A,G,I	TYPE TEST/ ANALYSIS	NONE
	Relative Humidity (%)	100		100	002		REF. A,B,C D,E G I	TYPE TEST/ ANALYSIS	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.3 E07		2.0 E07 SEE NOTE 4	002		REF. A,F,I	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE 3	002		REF. H,I	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT NO. B0003, PROJECT NO. 600461, QUALIFICATION TYPE TEST REPORT (CHRON 7155), LIMITORQUE VALVE ACTUATORS FOR CLASS 1E SERVICE OUTSIDE PRIMARY CONTAINMENT. TEST PERFORMED NOV. 13, 1974 TO JAN. 23, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT). B . REPORT NO. B0009, PROJECT NO. 600426, QUALIFICATION TYPE	1 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 250F IN REFERENCE A, AND QUALIFIED TO 300F BY ANALYSIS IN REFERENCE G. 2 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 25 PSIG IN REFERENCE A, AND QUALIFIED TO 105 PSIG BY ANALYSIS IN REFERENCE G.

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DOCUMENTATION REFERENCES:	NOTES:
<p>TEST REPORT (CHRON 7156). LIMITORQUE DC VALVE ACTUATORS FOR NUCLEAR POWER STATIONS. TEST PERFORMED SEPT 2, 1975 TO NOV 3, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT).</p> <p>C . LIMITORQUE SHOP ORDER NO. 600376A (CHRON 7157), QUALIFICATION TEST OF LIMITORQUE VALVE OPERATORS IN A SIMULATED REACTOR CONTAINMENT POST-ACCIDENT STEAM ENVIRONMENT, SEPT, 1972 (TEST PROFILE IS FIGURE 3 OF THIS REPORT).</p> <p>D . PROJECT NO. 600456 (CHRON 7158). NUCLEAR POWER STATION, QUALIFICATION TYPE TEST REPORT, LIMITORQUE VALVE ACTUATORS FOR PWR SERVICE. TEST PERFORMED JUNE 7, 1974 TO NOV 22, 1974. TEST PROFILE IS FIGURE 6 OF THIS REPORT.</p> <p>E . REPORT NO. 80027, PROJ NO. 600508 (CHRON 7159), LIMITORQUE VALVE ACTUATOR TEMPERATURE RELATED TO HIGH SUPERHEAT AMBIENT TEMPERATURES, DATED 10/18/78 (TEST PROFILE IS FIGURE 2 OF THIS REPORT).</p> <p>F . REPORT NO. 80058 (CHRON 7160), LIMITORQUE VALVE ACTUATOR QUALIFICATION FOR NUCLEAR POWER STATION SERVICE, DATED 1/11/80.</p> <p>G . BECHTEL ENGINEERING ANALYSIS OF LIMITORQUE INSULATION CLASS B MOTOR OPERATORS DATED 3/26/82 (CHRON 6775).</p> <p>H . AGING EVALUATION FORM L200-00B REV. 1, DATED 9/2/83 (CHRON 13248).</p> <p>I . SECTION VII.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 16.</p> <p>(REFERENCES SUMMARIZED IN SECTION IX.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 17.)</p>	<p>3 . QUALIFIED LIFE IS BASED ON OPERATION AT LEAST TWICE A YEAR AND LUBRICATION CHECKS AS FOLLOWS-</p> <p>A) MAIN GEAR CASE-CHECK LUBRICANT FOR PROPER LEVEL AND PRESENCE OF CONTAMINANTS AND LUBRICATE ZERK FITTING EVERY 18 MONTHS.</p> <p>B) GEARED LIMIT SWITCH-INSPECT LUBRICATION EVERY 36 MONTHS.</p> <p>4 . CLASS B AC MOTORS WERE SEPARATELY TESTED TO 2.0 E08 RADS IN ACCORDANCE WITH REFERENCE A.</p>

L200-01
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: L200-01-002

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 148
 Revision: 2
 Date: 09/22/83

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EQ Equip No: L200-01-003

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-1932 Component: MDTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-O, AC-CLASS B Purchase Order Number: M-151A Function/Service: CONTAINMENT HEAT RE- MOVAL/SUPPRESSION POOL SPRAY HEADER ISOLATION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 353177A OPERATOR S/N 136615 MOTOR S/N 1B600008FW2 MOTOR MFR IS RELIANCE
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence		NA

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO- 1939 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-O,AC-CLASS B Purchase Order Number: M-137A Function/Service: REACTOR CORE COOLING/ RHR HEAT EXCHANGER 1E-201B INLET ISOLATION Accuracy: Spec: NA Location: NW CRNR RM Floor Elevation: 732' -0"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 353178B OPERATOR S/N 134702 MOTOR S/N 1B600011F2 MOTOR MFR IS RELIANCE
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M119/F5 Loc Dwg: M266/G7 Elec Scheme: E121/49 VDR ID: E11-FO28B Mfr Model Ref: V.P. M151A-6							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M119/D4 Loc Dwg: M253/C7 Elec Scheme: E121/43B VDR ID: E11-FO47B Mfr Model Ref: V.P. M137A-70							

L200-01

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: L200-01-004

EQUIPMENT QUALIFICATION REPORT
DATA SHEET

Sheet No. 149

Revision: 2

Date: 09/22/83

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EQ Equip No: L200-01-005

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-1941 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-O,AC-CLASS B Purchase Order Number: M-137A Function/Service: REACTOR CORE COOLING/ RHR HEAT EXCHANGER 1E-201B OUTLET ISOLATION Accuracy: Spec: NA Location: NW CRNR RM Floor Elevation: 732'-0"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 353178B OPERATOR S/N 134701 MOTOR MFR IS RELIANCE
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL SERVICE WATER Plant I.D. Number: MO-1942 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-O,AC-CLASS B Purchase Order Number: M-137A Function/Service: REACTOR CORE COOLING/ RHR SERVICE WATER SUPPLY TO RHR SYSTEM ISOLATION Accuracy: Spec: NA Location: SE CRNR RM Floor Elevation: 736'-6"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 353178B OPERATOR S/N 141259 MOTOR S/N 1BA603558KW MOTOR MFR IS RELIANCE
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M119/E3 Loc Dwg: M253/C7 Elec Scheme: E121/43 VDR ID: E11-FO03B Mfr Model Ref: V.P. M137A-70							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 13 P&ID: M113/F8 Loc Dwg: M266/E3 Elec Scheme: E121/46 VDR ID: E11-FO75 Mfr Model Ref: V.P. M137A-70							

L200-01
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: L200-01-006

EQUIPMENT QUALIFICATION REPORT DATA SHEET

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EQ Equip No: L200-01-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-1989 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-O,AC-CLASS B Purchase Order Number: M-151A Function/Service: REACTOR CORE COOLING /RHR TRAIN B SUPPRES- SION POOL ISOLATION Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 353177K OPERATOR S/N 140388 MOTOR S/N 1BA602960JW MOTOR MFR IS RELIANCE
	Temperature (*F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-2005 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-O,AC-CLASS B Purchase Order Number: M-151A Function/Service: CONTAINMENT HEAT RE- MOVAL/SUPPRESSION POOL SPRAY HEADER ISOLATION Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 353177A OPERATOR S/N 136616 MOTOR S/N 1B600008FW1 MOTOR MFR IS RELIANCE
	Temperature (*F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M119/D7 Loc Dwg: M245/E7 Elec Scheme: E121/45 VDR ID: NONE Mfr Model Ref: V.P. M151A-11							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M120/G4 Loc Dwg: E316/D7 Elec Scheme: E121/49 VDR ID: E11-FO28A Mfr Model Ref: V.P. M151A-6							

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: L200-01-009

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 151
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EQ Equip No: L200-01-010

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-2029 Component: MOTOR OPERATOR	Temperature (*F)	140	353178B OPERATOR S/N
Manufacturer: LIMITORQUE	Pressure (PSIG)	0	134703 MOTOR MFR IS
Model Number: SMB-O,AC-CLASS B	Relative Humidity (%)	100	RELIANCE
Purchase Order Number: M-137A	Chemical Spray	NA	
Function/Service: REACTOR CORE COOLING /RHR HEAT EXCHANGER 1E-201A INLET ISOLATION	Seismic	NA	
Accuracy: Spec: NA Location: SE CRNR RM	Radiation (Rad)	5.9 EO6	
Floor Elevation: 731' - 4"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-2031 Component: MOTOR OPERATOR	Temperature (*F)	140	353178B OPERATOR S/N
Manufacturer: LIMITORQUE	Pressure (PSIG)	0	134704 MOTOR S/N
Model Number: SMB-O,AC-CLASS B	Relative Humidity (%)	100	B6000011F1 MOTOR MFR IS
Purchase Order Number: M-137A	Chemical Spray	NA	RELIANCE
Function/Service: REACTOR CORE COOLING /RHR HEAT EXCHANGER 1E-201A OUTLET ISOLATION	Seismic	NA	
Accuracy: Spec: NA Location: SE CRNR RM	Radiation (Rad)	5.9 EO6	
Floor Elevation: 731' - 4"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 09		P&ID: M120/D5	
Loc Dwg: M277/C3	Elec Scheme: E121/43B			VDR ID: E11-FO47A			
Mfgr Model Ref: V.P. M137A-70							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 09		P&ID: M120/E7	
Loc Dwg: M277/C3	Elec Scheme: E121/43			VDR ID: E11-FO03A			
Mfgr Model Ref: V.P. M137A-70							

L200-01
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: L200-01-011

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EQ Equip No: L200-01-014

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-2069 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-O, AC-CLASS B Purchase Order Number: M-151A Function/Service: REACTOR CORE COOLING/ /RHR TRAIN A SUPPRES- SION POOL ISOLATION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9" Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 353177K OPERATOR S/N 140389 MOTOR S/N 1BA602960JW MOTOR MFR IS RELIANCE
	Temperature (*F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 EO7	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL SERVICE WATER Plant I.D. Number: MO-1947 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-O, AC-CLASS B Purchase Order Number: M-144A Function/Service: REACTOR CORE COOLING/ RHR HEAT EXCHANGER 1E-201B SERVICE WATER DISCHARGE ISOLATION Accuracy: Spec: NA Location: NW CRNR RM Floor Elevation: 732'-0" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 363844A OPERATOR S/N 153537 MOTOR S/N 447014EX MOTOR MFR IS RELIANCE
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 EO6	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M120/D3 Loc Dwg: M265/F3 Elec Scheme: E121/45 VDR ID: NONE Mfr Model Ref: V.P. M151A-11							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 13 P&ID: M113/D7 Loc Dwg: E316/E8 Elec Scheme: E121/55 VDR ID: E11-F068B Mfr Model Ref: V.P. M144A-120-4							

L200-01

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL SERVICE WATER Plant I.D. Number: MO-2046 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-O, AC-CLASS B Purchase Order Number: M-144A Function/Service: REACTOR CORE COOLING/ RHR HEAT EXCHANGER 1E-201A SERVICE WATER DISCHARGE ISOLATION Accuracy: Spec: NA Location: HPCI ROOM Floor Elevation: 731'-9"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 363844A OPERATOR S/N 153536 MOTOR MFR IS RELIANCE THIS VALVE NOT REQUIRED TO OPERATE DURING HELBS IN HPCI ROOM
	Temperature ("F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.1 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 717'-2" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: Plant I.D. Number: Component: Manufacturer: Model Number: Purchase Order Number: Function/Service: Accuracy: Spec: Location: Floor Elevation: Flood Level Elevation: Above Flood Level: Yes: No:	Operating Time		
	Temperature ("F)		
	Pressure (PSIG)		
	Relative Humidity (%)		
	Chemical Spray		
	Seismic		
	Radiation (Rad)		
	Aging		
	Submergence		

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	NO	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 13 P&ID: M113/D5 Loc Dwg: E317/D2 Elec Scheme: E121/55 VDR ID: E11-FO68A Mfr Model Ref: V.P. M144A-120-4							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins: Environment: EQ Sys No: P&ID: Loc Dwg: Elec Scheme: VDR ID: Mfr Model Ref:							

L200-02

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

Sheet No: 154
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-00, AC-CLASS H NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. C,D,H	TYPE TEST	NONE
	Temperature (°F)	SEE GENERAL NOTE 6		SEE NOTE (3)	001		REF. B,C,D E,H	TYPE TEST	NONE
	Pressure (PSIG)	SEE GENERAL NOTE 6		105	001		REF. B,C,H	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A,B,C D,E,H	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (2)	001		REF. D,H	TYPE TEST	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	4.3 E07		2.0 E08	001		REF. C,D F,H	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	001		REF. G,H	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT NO. B0003, PROJECT NO. 600461, QUALIFICATION TYPE TEST REPORT (CHRON 7155), LIMITORQUE VALVE ACTUATORS FOR CLASS 1E SERVICE OUTSIDE PRIMARY CONTAINMENT. TEST PERFORMED NOV. 13, 1974 TO JAN. 23, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT). B . REPORT NO. B0009, PROJECT NO. 600426, QUALIFICATION TYPE	1 . QUALIFIED LIFE IS BASED ON OPERATION AT LEAST TWICE A YEAR AND LUBRICATION CHECKS AS FOLLOWS- A) MAIN GEAR CASE-CHECK LUBRICANT FOR PROPER LEVEL AND PRESENCE OF CONTAMINANTS AND LUBRICATE ZERK FITTING EVERY 18 MONTHS. B) GEARED LIMIT SWITCH-INSPECT LUBRICATION EVERY 36 MONTHS.

L200-02

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

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EQUIPMENT QUALIFICATION REPORT

Sheet No. 155

Revision: 2

Date: 09/22/83

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DOCUMENTATION REFERENCES:	NOTES:
<p>TEST REPORT (CHRON 7156). LIMITORQUE DC VALVE ACTUATORS FOR NUCLEAR POWER STATIONS. TEST PERFORMED SEPT 2, 1975 TO NOV 3, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT).</p> <p>C . LIMITORQUE SHOP ORDER NO. 600376A (CHRON 7157), QUALIFICATION TEST OF LIMITORQUE VALVE OPERATORS IN A SIMULATED REACTOR CONTAINMENT POST-ACCIDENT STEAM ENVIRONMENT, SEPT, 1972 (TEST PROFILE IS FIGURE 3 OF THIS REPORT).</p> <p>D . PROJECT NO. 600456 (CHRON 7158). NUCLEAR POWER STATION, QUALIFICATION TYPE TEST REPORT, LIMITORQUE VALVE ACTUATORS FOR PWR SERVICE. TEST PERFORMED JUNE 7, 1974 TO NOV 22, 1974. TEST PROFILE IS FIGURE 6 OF THIS REPORT.</p> <p>E . REPORT NO. B0027, PROJ NO. 600508 (CHRON 7159), LIMITORQUE VALVE ACTUATOR TEMPERATURE RELATED TO HIGH SUPERHEAT AMBIENT TEMPERATURES, DATED 10/18/78 (TEST PROFILE IS FIGURE 2 OF THIS REPORT).</p> <p>F . REPORT NO. B0058 (CHRON 7160), LIMITORQUE VALVE ACTUATOR QUALIFICATION FOR NUCLEAR POWER STATION SERVICE, DATED 1/11/80.</p> <p>G . AGING EVALUATION FORM L200-00H REV. 1, DATED 8/13/83 (CHRON 12986).</p> <p>H . SECTION VII.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 002.</p>	<p>2 . REPRESENTATIVE VALVE OPERATORS WERE SUBJECTED TO SPRAY CHEMISTRY DESCRIBED IN IEEE STANDARD 382-1972 TABLE 1 WHICH IS MORE SEVERE THAN DEMIN WATER</p> <p>3 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 310F IN REFERENCE D, TO 340F IN REFERENCES B AND C, AND A SIMILAR SIZE VALVE OPERATOR (SMB-00) SUCCESSFULLY PASSED A HIGH TEMPERATURE TEST OF 385F IN REFERENCE E.</p>

L200-02
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: L200-02-023

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EQ Equip No: L200-02-027

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR CORE ISOLATION COOLING Plant I.D. Number: MO-2400 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-00, AC-CLASS H Purchase Order Number: M-133A Function/Service: PRIMARY CONTAINMENT ISOLATION/RCIC-STEAM SUPPLY LINE ISOLATION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775' - 11"	Operating Time	1 HOUR	BILL OF MAT'L ORDER NUMBER 353179D OPERATOR S/N 137629 MOTOR S/N 1B600016HW2 MOTOR MFR IS RELIANCE
	Temperature (*F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR WATER CLEANUP Plant I.D. Number: MO-2700 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-00, AC-CLASS H Purchase Order Number: M-134A Function/Service: PRIMARY CONTAINMENT ISOLATION/RWCU LINE INBOARD ISOLATION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775' - 11"	Operating Time	1 HOUR	BILL OF MAT'L ORDER NUMBER 353176A OPERATOR S/N 137255 MOTOR MFR IS RELIANCE
	Temperature (*F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	YES	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 17 P&ID: M124/H7 Loc Dwg: E330/E3 Elec Scheme: E121/29 VDR ID: E51-FO07 Mfr Model Ref: V.P. M133A-6							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 41 P&ID: M127/F8 Loc Dwg: E330/D5 Elec Scheme: E122/3 VDR ID: G31-FO01 Mfr Model Ref: V.P. M134A-20							

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER	Operating Time	1 HOUR	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-4423 Component: MOTOR OPERATOR	Temperature (*F)	SEE GENERAL NOTE 6	375212A OPERATOR S/N
Manufacturer: LIMITORQUE	Pressure (PSIG)	SEE GENERAL NOTE 6	136268 MOTOR MFR IS
Model Number: SMB-00, AC-CLASS H	Relative Humidity (%)	100	RELIANCE
Purchase Order Number: M-133A	Chemical Spray	DEMIN WATER	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE CONDENSATE DRAIN ISOLATION	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	2.1 E07	
Location: DRYWELL	Aging	40 YEARS	
Floor Elevation: 757' -6"	Submergence	NA	
Flood Level Elevation: 744' -0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (*F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:	Submergence		
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 34	P&ID: M114/B3				
Loc Dwg: E329/E2	Elec Scheme: E122/2	VDR ID: B21-FO16					
Mfr Model Ref: V.P. M133A-2							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins:	Environment:	EQ Sys No:	P&ID:				
Loc Dwg:	Elec Scheme:	VDR ID:					
Mfr Model Ref:							

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, AC-CLASS B NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A,C,D G,I	TYPE TEST/ ANALYSIS	NONE
	Temperature (°F)	277		SEE NOTE (2)	001		REF. A,G,I	TYPE TEST/ ANALYSIS	NONE
	Pressure (PSIG)	1.2		SEE NOTE (1)	001		REF. A,G,I	TYPE TEST/ ANALYSIS	NONE
	Relative Humidity (%)	100		100	001		REF. A,B,C D,E G,I	TYPE TEST/ ANALYSIS	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.3 E07		2.0 E07 SEE NOTE (4)	001		REF. A,F,I	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (3)	001		REF. H,I	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT NO. B0003, PROJECT NO. 600461, QUALIFICATION TYPE TEST REPORT (CHRON 7155), LIMITORQUE VALVE ACTUATORS FOR CLASS 1E SERVICE OUTSIDE PRIMARY CONTAINMENT. TEST PERFORMED NOV. 13, 1974 TO JAN. 23, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT). B . REPORT NO. B0009, PROJECT NO. 600426, QUALIFICATION TYPE	2. REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 250F IN REFERENCE A, AND QUALIFIED TO 300F BY ANALYSIS IN REFERENCE G. 1. REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 25 PSIG IN REFERENCE A, AND QUALIFIED TO 105 PSIG BY ANALYSIS IN REFERENCE G.

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DOCUMENTATION REFERENCES:	NOTES:
<p>TEST REPORT (CHRON 7156). LIMITORQUE DC VALVE ACTUATORS FOR NUCLEAR POWER STATIONS. TEST PERFORMED SEPT 2, 1975 TO NOV 3, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT).</p> <p>C . LIMITORQUE SHOP ORDER NO. 600376A (CHRON 7157), QUALIFICATION TEST OF LIMITORQUE VALVE OPERATORS IN A SIMULATED REACTOR CONTAINMENT POST-ACCIDENT STEAM ENVIRONMENT, SEPT, 1972 (TEST PROFILE IS FIGURE 3 OF THIS REPORT).</p> <p>D . PROJECT NO. 600456 (CHRON 7158). NUCLEAR POWER STATION, QUALIFICATION TYPE TEST REPORT, LIMITORQUE VALVE ACTUATORS FOR PWR SERVICE. TEST PERFORMED JUNE 7, 1974 TO NOV 22, 1974. TEST PROFILE IS FIGURE 6 OF THIS REPORT.</p> <p>E . REPORT NO. B0027, PROJ NO. 600508 (CHRON 7159), LIMITORQUE VALVE ACTUATOR TEMPERATURE RELATED TO HIGH SUPERHEAT AMBIENT TEMPERATURES, DATED 10/18/78 (TEST PROFILE IS FIGURE 2 OF THIS REPORT).</p> <p>F . REPORT NO. B0058 (CHRON 7160), LIMITORQUE VALVE ACTUATOR QUALIFICATION FOR NUCLEAR POWER STATION SERVICE, DATED 1/11/80.</p> <p>G . BECHTEL ENGINEERING ANALYSIS OF LIMITORQUE INSULATION CLASS B MOTOR OPERATORS DATED 3/26/82 (CHRON 6775).</p> <p>H . AGING EVALUATION FORM L200-OOB REV. 1, DATED 9/2/83 (CHRON 13248).</p> <p>I . SECTION VII.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 14 AND 16.</p> <p>(REFERENCES SUMMARIZED IN SECTION IX.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 17 AND 123.)</p>	<p>3 . QUALIFIED LIFE IS BASED ON OPERATION AT LEAST TWICE A YEAR AND LUBRICATION CHECKS AS FOLLOWS-</p> <p>A) MAIN GEAR CASE-CHECK LUBRICANT FOR PROPER LEVEL AND PRESENCE OF CONTAMINANTS AND LUBRICATE ZERK FITTING EVERY 18 MONTHS.</p> <p>B) GEARED LIMIT SWITCH-INSPECT LUBRICATION EVERY 36 MONTHS.</p> <p>4 . CLASS B AC MOTORS WERE SEPARATELY TESTED TO 2.0 E08 RADS IN ACCORDANCE WITH REFERENCE A.</p>

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EQ Equip No: L200-03-003

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-1935 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, AC-CLASS B Purchase Order Number: M-137B Function/Service: REACTOR CORE COOLING/ RHR PUMPS 1P229B,D MINI FLOW TEST LINE ISOLATION Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 356059I OPERATOR S/N 140780 MOTOR S/N 434011KW MOTOR MFR IS RELIANCE
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 EO7	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-1949A Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, AC-CLASS B Purchase Order Number: M-141A Function/Service: REACTOR CORE COOLING/ RHR HEAT EXCHANGER 1E-201B VENT ISOLATION Accuracy: Spec: NA Location: NW CRNR RM Floor Elevation: 747'-6" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 370364A OPERATOR S/N 177877 MOTOR MFR IS RELIANCE
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 EO6	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M119/C5 Loc Dwg: M256/D3 Elec Scheme: E121/54 VDR ID: E11-FO07B Mfr Model Ref: V.P. M137B-13							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M119/C4 Loc Dwg: E316/E8 Elec Scheme: E121/47 VDR ID: E11-F103B Mfr Model Ref: V.P. M141A-66							

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EQ Equip No: L200-03-005

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-1949B Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, AC-CLASS B Purchase Order Number: M-141A Function/Service: REACTOR CORE COOLING/ RHR HEAT EXCHANGER 1E-201B VENT ISOLATION Accuracy: Spec: NA Location: NW CRNR RM Floor Elevation: 747'-6" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 370364A OPERATOR S/N 177878 MOTOR MFR IS RELIANCE
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
Flood Level	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-1967 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, AC-CLASS B Purchase Order Number: M-137B Function/Service: REACTOR CORE COOLING/ RHR TRAIN B CONDENSATE RETURN TO RCIC Accuracy: Spec: NA Location: NW CRNR RM Floor Elevation: 732'-0" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 356059G OPERATOR S/N 140777 MOTOR MFR IS RELIANCE
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
Flood Level	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E316/E8 Mfr Model Ref: V.P. M141A-66 Environment: HARSH Elec Scheme: E121/47 EQ Sys No: 09 P&ID: M119/D4 VDR ID: E11-F104B							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: M246/E7 Mfr Model Ref: V.P. M137B-43 Environment: HARSH Elec Scheme: E121/50 EQ Sys No: 09 P&ID: M119/E2 VDR ID: E11-FO26B							

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EQ Equip No: L200-03-007

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-1970 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, AC-CLASS B Purchase Order Number: M-137B Function/Service: REACTOR CORE COOLING/ RHR TRAIN B BYPASS LINE ISOLATION TO THE SUPPRESSION POOL Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716'-9"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 356059F OPERATOR S/N 147081 MOTOR S/N 480302JV MOTOR MFR IS RELIANCE
	Temperature (*F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-2009 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, AC-CLASS B Purchase Order Number: M-137B Function/Service: REACTOR CORE COOLING/ RHR PUMPS 1P-229A,C MINI FLOW TEST LINE ISOLATION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 356591 OPERATOR S/N 140779 MOTOR S/N 434011KW MOTOR MFR IS RELIANCE
	Temperature (*F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: M246/E7 Mfr Model Ref: V.P. M137B-12 Environment: HARSH EQ Sys No: 09 Elec Scheme: E121/50 P&ID: M119/F3 VDR ID: E11-FO11B							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: M277/D5 Mfr Model Ref: V.P. M137B-13 Environment: HARSH EQ Sys No: 09 Elec Scheme: E121/54 P&ID: M120/C4 VDR ID: E11-FO07A							

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Owner: IDWA ELECTRIC
 Facility: DUANE ARNOLD
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EQ Equip No: L200-03-009

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-2036 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, AC-CLASS B Purchase Order Number: M-137B Function/Service: REACTOR CORE COOLING/ RHR TRAIN A CONDENSATE TO RCIC Accuracy: Spec: NA Location: SE CRNR RM Floor Elevation: 731'-4"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 356059G OPERATOR S/N 140778 MOTOR MFR IS RELIANCE
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence		NA

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: Environment: EQ Sys No: P&ID: 1974 HARSH 09 M120/E8 Loc Dwg: M277/C3 Elec Scheme: E121/50 VDR ID: E11-FO26A Mfr Model Ref: V.P. M137B-43							

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-2038 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, AC-CLASS B Purchase Order Number: M-137B Function/Service: REACTOR CORE COOLING/ RHR BYPASS TRAIN A LINE ISOLATION TO THE SUPPRESSION POOL Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716' - 9"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 356059F OPERATOR S/N 147080 MOTOR S/N 480302JV MOTOR MFR IS RELIANCE
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence		NA

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: Environment: EQ Sys No: P&ID: 1974 HARSH 09 M120/F7 Loc Dwg: M277/D5 Elec Scheme: E121/50 VDR ID: E11-FO11A Mfr Model Ref: V.P. M137B-43							

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Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

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EQ Equip No: L200-03-013

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-2044A Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, AC-CLASS B Purchase Order Number: M-141A Function/Service: REACTOR CORE COOLING/ RHR HEAT EXCHANGER 1E-201A VENT ISOLATION Accuracy: Spec: NA Location: SE CRNR RM Floor Elevation: 747'-0"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 370364A OPERATOR S/N 177879 MOTOR MFR IS RELIANCE
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-2044B Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, AC-CLASS B Purchase Order Number: M-141A Function/Service: REACTOR CORE COOLING/ RHR HEAT EXCHANGER 1E-201A VENT ISOLATION Accuracy: Spec: NA Location: SE CRNR RM Floor Elevation: 747'-0"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 370364A OPERATOR S/N 177880 MOTOR MFR IS RELIANCE
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M120/C6 Loc Dwg: E317/D3 Elec Scheme: E121/47 VDR ID: E11-F103A Mfr Model Ref: V.P. M141A-66							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M120/C6 Loc Dwg: E317/D3 Elec Scheme: E121/47 VDR ID: E11-F104A Mfr Model Ref: V.P. M141A-66							

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EQ Equip No: L200-03-017

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CORE SPRAY Plant I.D. Number: MO-2104 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, AC-CLASS B Purchase Order Number: M-141 Function/Service: REACTOR CORE COOLING /CORE SPRAY MINI FLOW LINE ISOLATION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 364542C OPERATOR S/N 157953 MOTOR S/N J235951 MOTOR MFR IS RELIANCE
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CORE SPRAY Plant I.D. Number: MO-2124 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, AC-CLASS B Purchase Order Number: M-141 Function/Service: REACTOR CORE COOLING /CORE SPRAY MINI FLOW LINE ISOLATION Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 364542C OPERATOR S/N 157954 MOTOR S/N J235952 MOTOR MFR IS RELIANCE
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E317/E5 Mfr Model Ref:							
Environment: HARSH Elec Scheme: E121/6							
EQ Sys No: 08 P&ID: M121/D4 VDR ID: E21-F031A							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E316/F6 Mfr Model Ref:							
Environment: HARSH Elec Scheme: E121/6							
EQ Sys No: 08 P&ID: M121/D4 VDR ID: E21-F031B							

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 Facility: DUANE ARNOLD
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EQ Equip No: L200-03-020

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: HIGH PRESSURE COOLANT INJECTION Plant I.D. Number: MO-2290A Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, AC-CLASS B Purchase Order Number: M-141A Function/Service: REACTOR CORE COOLING /SUPPRESSION POOL VACUUM BREAKER Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 372709 OPERATOR S/N 171628 MOTOR MFR IS RELIANCE
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: HIGH PRESSURE COOLANT INJECTION Plant I.D. Number: MO-2290B Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, AC-CLASS B Purchase Order Number: M-141A Function/Service: REACTOR CORE COOLING /SUPPRESSION POOL VACUUM BREAKER Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 372709 OPERATOR S/N 171629 MOTOR MFR IS RELIANCE
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 06 P&ID: M122/B8 Loc Dwg: E317/D5 Elec Scheme: E121/23A VDR ID: E41-F070 Mfr Model Ref: V.P. M141A-63							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	NO	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 06 P&ID: M122/B8 Loc Dwg: E317/D5 Elec Scheme: E121/23A VDR ID: E41-F069 Mfr Model Ref: V.P. M141A-63							

L200-03

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: L200-03-023

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EQ Equip No: L200-03-024

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: MD-4320A Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, AC-CLASS B Purchase Order Number: M-141A Function/Service: PRIMARY CONTAINMENT ISOLATION/CAD SYSTEM NITROGEN SUPPLY LINE ISOLATION Accuracy: Spec: NA Location: HPCI ROOM Floor Elevation: 716'-9"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
	Temperature (°F)	140	372709
	Pressure (PSIG)	0	OPERATOR S/N 171626
	Relative Humidity (%)	100	MOTOR MFR IS RELIANCE
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.1 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 717'-2" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: MD-4320B Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, AC-CLASS B Purchase Order Number: M-141A Function/Service: PRIMARY CONTAINMENT ISOLATION/CAD SYSTEM NITROGEN SUPPLY LINE ISOLATION Accuracy: Spec: NA Location: HPCI ROOM Floor Elevation: 716'-9"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
	Temperature (°F)	140	372709
	Pressure (PSIG)	0	OPERATOR S/N 171627
	Relative Humidity (%)	100	MOTOR MFR IS RELIANCE
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.1 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 717'-2" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 29		P&ID: M143/C3	
Loc Dwg: E317/B4	Elec Scheme: E122/31			VDR ID: NONE			
Mfgr Model Ref: V.P. M141A-68							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 29		P&ID: M143/C4	
Loc Dwg: E317/B3	Elec Scheme: E122/31			VDR ID: NONE			
Mfr Model Ref:	V.P. M141A-68						

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQ Equip No: L200-03-026

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR BUILDING COOLING WATER Plant I.D. Number: MO-4841A Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, AC-CLASS B Purchase Order Number: M-137B Function/Service: PRIMARY CONTAINMENT ISOLATION/REACTOR RECIRC PUMP AND DRYWELL AND CRAIN SUM HEAT EXCHANGER ISOLAT Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716' - 9" Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Operating Time	1 HOUR	BILL OF MAT'L ORDER NUMBER
	Temperature (°F)	140	356059A OPERATOR S/N
	Pressure (PSIG)	0	139778 MOTOR S/N
	Relative Humidity (%)	100	1BA602956JN MOTOR MFR IS
	Chemical Spray	NA	RELIANCE
	Seismic	NA	
	Radiation (Rad)	2.7 EO6	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR BUILDING COOLING WATER Plant I.D. Number: MO-4841B Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, AC-CLASS B Purchase Order Number: M-137B Function/Service: PRIMARY CONTAINMENT ISOLATION/REACTOR RECIRC PUMP AND ORYWELL DRAIN SUMP HEAT EXCHANGER ISOLAT Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716' - 9" Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Operating Time	1 HOUR	BILL OF MAT'L ORDER NUMBER
	Temperature (°F)	140	364972A OPERATOR S/N
	Pressure (PSIG)	0	159044 MOTOR S/N
	Relative Humidity (%)	100	4434011KX MOTOR MFR IS
	Chemical Spray	NA	RELIANCE
	Seismic	NA	
	Radiation (Rad)	2.7 EO6	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Loc Dwg: E316/E5 Mfr Model Ref: V.P. M137B-15 Environment: HARSH Elec Scheme: E111/17 EQ Sys No: 42 P&ID: M112/E3 VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Loc Dwg: E316/E5 Mfr Model Ref: V.P. M137B-15 Environment: HARSH Elec Scheme: E111/17 EQ Sys No: 42 P&ID: M112/F3 VDR ID: NONE							

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-1, AC-CLASS B NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A, C, D G, I	TYPE TEST/ ANALYSIS	NONE
	Temperature (°F)	277		SEE NOTE (2)	001		REF. A, G, I	TYPE TEST/ ANALYSIS	NONE
	Pressure (PSIG)	1.2		SEE NOTE (1)	001		REF. A, G, I	TYPE TEST/ ANALYSIS	NONE
	Relative Humidity (%)	100		100	001		REF. A, B, C D, E G, I	TYPE TEST/ ANALYSIS	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.3 E07		2.0 E07 SEE NDTE (4)	001		REF. A, F, I	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (3)	001		REF. H, I	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT NO. B0003, PROJECT NO. 600461, QUALIFICATION TYPE TEST REPORT (CHRON 7155), LIMITORQUE VALVE ACTUATORS FOR CLASS 1E SERVICE OUTSIDE PRIMARY CONTAINMENT. TEST PERFORMED NOV. 13, 1974 TO JAN. 23, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT). B . REPORT NO. B0009, PROJECT NO. 600426, QUALIFICATION TYPE	2. REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 250F IN REFERENCE A, AND QUALIFIED TO 300F BY ANALYSIS IN REFERENCE G. 1. REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 25 PSIG IN REFERENCE A, AND QUALIFIED TO 105 PSIG BY ANALYSIS IN REFERENCE G.

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DOCUMENTATION REFERENCES:	NOTES:
<p>TEST REPORT (CHRON 7156). LIMITORQUE DC VALVE ACTUATORS FOR NUCLEAR POWER STATIONS. TEST PERFORMED SEPT 2, 1975 TO NOV 3, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT).</p> <p>C . LIMITORQUE SHOP ORDER NO. 600376A (CHRON 7157), QUALIFICATION TEST OF LIMITORQUE VALVE OPERATORS IN A SIMULATED REACTOR CONTAINMENT POST-ACCIDENT STEAM ENVIRONMENT, SEPT, 1972 (TEST PROFILE IS FIGURE 3 OF THIS REPORT).</p> <p>O . PROJECT NO. 600456 (CHRON 7158). NUCLEAR POWER STATION. QUALIFICATION TYPE TEST REPORT, LIMITORQUE VALVE ACTUATORS FOR PWR SERVICE. TEST PERFORMED JUNE 7, 1974 TO NOV 22, 1974. TEST PROFILE IS FIGURE 6 OF THIS REPORT.</p> <p>E . REPORT NO. B0027, PROJ NO. 600508 (CHRON 7159), LIMITORQUE VALVE ACTUATOR TEMPERATURE RELATED TO HIGH SUPERHEAT AMBIENT TEMPERATURES, DATED 10/18/78 (TEST PROFILE IS FIGURE 2 OF THIS REPORT).</p> <p>F . REPORT NO. B0058 (CHRON 7160), LIMITORQUE VALVE ACTUATOR QUALIFICATION FOR NUCLEAR POWER STATION SERVICE, DATED 1/11/80.</p> <p>G . BECHTEL ENGINEERING ANALYSIS OF LIMITORQUE INSULATION CLASS B MOTOR OPERATORS DATED 3/26/82 (CHRON 6775).</p> <p>H . AGING EVALUATION FORM L200-OOB REV. 1, DATED 9/2/83 (CHRON 13248).</p> <p>I . SECTION VII.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 16.</p>	<p>3 . QUALIFIED LIFE IS BASED ON OPERATION AT LEAST TWICE A YEAR AND LUBRICATION CHECKS AS FOLLOWS-</p> <p>A) MAIN GEAR CASE-CHECK LUBRICANT FOR PROPER LEVEL AND PRESENCE OF CONTAMINANTS AND LUBRICATE ZERK FITTING EVERY 18 MONTHS.</p> <p>B) GEARED LIMIT SWITCH-INSPECT LUBRICATION EVERY 36 MONTHS.</p> <p>4 . CLASS B AC MOTORS WERE SEPARATELY TESTED TO 2.0 EOB RADS IN ACCORDANCE WITH REFERENCE A.</p>

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 Facility: DUANE ARNOLD
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EQ Equip No: L200-05-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-2010 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-1, AC-CLASS B Purchase Order Number: M-137A Function/Service: REACTOR CORE COOLING /RHR SYSTEM CROSS TIE ISOLATION VALVE Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716'-9"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 353178A OPERATOR S/N 134365 MOTOR S/N 113600010F1 MOTOR MFR IS RELIANCE
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CORE SPRAY Plant I.D. Number: MO-2112 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-1, AC-CLASS B Purchase Order Number: M-151A Function/Service: REACTOR CORE COOLING /CORE SPRAY TEST LINE ISOLATION VALVE Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 353177E OPERATOR S/N 136547 MOTOR S/N 1B600009FW1 MOTOR MFR IS RELIANCE
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M120/D5 Loc Dwg: E316/C8 Elec Scheme: E121/45 VDR ID: E11-F010 Mfr Model Ref: V.P. M137A-70							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 08 P&ID: M121/F5 Loc Dwg: E317/D5 Elec Scheme: E121/7 VDR ID: E21-F015A Mfr Model Ref: V.P. M151A-3							

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 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: L200-05-003

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CORE SPRAY	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-2132 Component: MOTOR OPERATOR	Temperature (°F)	277	353177E OPERATOR S/N
Manufacturer: LIMITORQUE	Pressure (PSIG)	1.2	136548 MOTOR MFR IS
Model Number: SMB-1, AC-CLASS B	Relative Humidity (%)	100	RELIANCE
Purchase Order Number: M-151A	Chemical Spray	NA	
Function/Service: REACTOR CORE COOLING /CORE SPRAY TEST LINE ISOLATION VALVE	Seismic	NA	
Accuracy: Spec: NA Location: TORUS ROOM NORTH	Radiation (Rad)	1.3 E07	
Floor Elevation: 716' - 9"	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (°F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:	Submergence		
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 08	P&ID: M121/E5				
Loc Dwg: E316/F5	Elec Scheme: E121/7	VDR ID: E21-F015B					
Mfgr Model Ref: V.P. M151A-3							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins:	Environment:	EQ Sys No:	P&ID:				
Loc Dwg:	Elec Scheme:	VDR ID:					
Mfgr Model Ref:							

L200-06

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-2, AC-CLASS B NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF A, C D, G	TYPE TEST/ ANALYSIS	NONE
	Temperature (°F)	140		SEE NOTE (1)	001		REF A, G	TYPE TEST/ ANALYSIS	NONE
	Pressure (PSIG)	0		SEE NOTE (2)	001		REF A, G	TYPE TEST/ ANALYSIS	NONE
	Relative Humidity (%)	100		100	001		REF A, B, C D, E, G	TYPE TEST/ ANALYSIS	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.3 E07		2.0 E07 SEE NOTE (4)	001		REF. A, F	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (3)	001		REF. H	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT NO. B0003, PROJECT NO. 600461, QUALIFICATION TYPE TEST REPORT (CHRON 7155), LIMITORQUE VALVE ACTUATORS FOR CLASS 1E SERVICE OUTSIDE PRIMARY CONTAINMENT. TEST PERFORMED NOV. 13, 1974 TO JAN. 23, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT). B . REPORT NO. B0009, PROJECT NO. 600426, QUALIFICATION TYPE	1 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 250F IN REFERENCE A, AND QUALIFIED TO 300F BY ANALYSIS IN REFERENCE G. 2 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 25 PSIG IN REFERENCE A, AND QUALIFIED TO 105 PSIG BY ANALYSIS IN REFERENCE G.

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Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
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DOCUMENTATION REFERENCES:	NOTES:
<p>TEST REPORT (CHRON 7156). LIMITORQUE DC VALVE ACTUATORS FOR NUCLEAR POWER STATIONS. TEST PERFORMED SEPT 2, 1975 TO NOV 3, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT).</p> <p>C . LIMITORQUE SHOP ORDER NO. 600376A (CHRON 7157), QUALIFICATION TEST OF LIMITORQUE VALVE OPERATORS IN A SIMULATED REACTOR CONTAINMENT POST-ACCIDENT STEAM ENVIRONMENT, SEPT, 1972 (TEST PROFILE IS FIGURE 3 OF THIS REPORT).</p> <p>D . PROJECT NO. 600456 (CHRON 7158). NUCLEAR POWER STATION, QUALIFICATION TYPE TEST REPORT, LIMITORQUE VALVE ACTUATORS FOR PWR SERVICE. TEST PERFORMED JUNE 7, 1974 TO NOV 22, 1974. TEST PROFILE IS FIGURE 6 OF THIS REPORT.</p> <p>E . REPORT NO. B0027, PROJ NO. 600508 (CHRON 7159), LIMITORQUE VALVE ACTUATOR TEMPERATURE RELATED TO HIGH SUPERHEAT AMBIENT TEMPERATURES, DATED 10/18/78 (TEST PROFILE IS FIGURE 2 OF THIS REPORT).</p> <p>F . REPORT NO. B0058 (CHRON 7160), LIMITORQUE VALVE ACTUATOR QUALIFICATION FOR NUCLEAR POWER STATION SERVICE, DATED 1/11/80.</p> <p>G . BECHTEL ENGINEERING ANALYSIS OF LIMITORQUE INSULATION CLASS B MOTOR OPERATORS DATED 3/26/82 (CHRON 6775).</p> <p>H . AGING EVALUATION FORM L200-00B REV. 1, DATED 9/2/83 (CHRON 13248).</p> <p>(REFERENCES SUMMARIZED IN SECTION IX.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 13.)</p>	<p>3 . QUALIFIED LIFE IS BASED ON OPERATION AT LEAST TWICE A YEAR AND LUBRICATION CHECKS AS FOLLOWS-</p> <p>A) MAIN GEAR CASE-CHECK LUBRICANT FOR PROPER LEVEL AND PRESENCE OF CONTAMINANTS AND LUBRICATE ZERK FITTING EVERY 18 MONTHS.</p> <p>B) GEARED LIMIT SWITCH-INSPECT LUBRICATION EVERY 36 MONTHS.</p> <p>4 . CLASS B AC MOTORS WERE SEPARATELY TESTED TO 2.0 EOB RADS IN ACCORDANCE WITH REFERENCE A.</p>

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Owner: IOWA ELECTRIC

Facility: DUANE ARNDLD

Unit: 1

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-2001 Component: MOTOR OPERATOR	Temperature (°F)	140	353177F OPERATOR S/N
Manufacturer: LIMITORQUE	Pressure (PSIG)	0	136574 MOTOR MFR IS
Model Number: SMB-2, AC-CLASS B	Relative Humidity (%)	100	RELIANCE
Purchase Order Number: M-151A	Chemical Spray	NA	
Function/Service: CONTAINMENT HEAT REMOVAL/CONTAINMENT SPRAY ISOLATION LOOP A	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	1.3 E07	
Location: TORUS ROOM NORTH	Aging	40 YEARS	
Floor Elevation: 716'-9"	Submergence	NA	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (°F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:	Submergence		
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NO	NA

Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 09	P&ID: M120/G4
Loc Dwg: M257/D7	Elec Scheme: E113/89	VDR ID: E11-FO16A	
Mfgr Model Ref: V.P. M151A-4			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM

Qual Life Begins:	Environment:	EQ Sys No:	P&ID:
Loc Dwg:	Elec Scheme:	VDR ID:	
Mfgr Model Ref:			

L200-07

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-3, DC-CLASS B NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A,B,C D,G,I	TYPE TEST/ ANALYSIS	NONE
	Temperature (°F)	300		SEE NOTE (2)	001		REF. A,B,C D,E G,I	TYPE TEST/ ANALYSIS	NONE
	Pressure (PSIG)	1.8		105	001		REF. B,C G,I	TYPE TEST/ ANALYSIS	NONE
	Relative Humidity (%)	100		100	001		REF. A,B,C D,E G,I	TYPE TEST/ ANALYSIS	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	9.4 E06		2.0 E07	001		REF. A,F G,I	TYPE TEST/ ANALYSIS	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	001		REF. H,I	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT NO. B0003, PROJECT NO. 600461, QUALIFICATION TYPE TEST REPORT (CHRON 7155), LIMITORQUE VALVE ACTUATORS FOR CLASS 1E SERVICE OUTSIDE PRIMARY CONTAINMENT. TEST PERFORMED NOV. 13, 1974 TO JAN. 23, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT). B . REPORT NO. B0009, PROJECT NO. 600426, QUALIFICATION TYPE	1 . QUALIFIED LIFE IS BASED ON OPERATION AT LEAST TWICE A YEAR AND LUBRICATION CHECKS AS FOLLOWS- A) MAIN GEAR CASE-CHECK LUBRICANT FOR PROPER LEVEL AND PRESENCE OF CONTAMINANTS AND LUBRICATE ZERK FITTING EVERY 18 MONTHS. B) GEARED LIMIT SWITCH-INSPECT LUBRICATION EVERY 36 MONTHS.

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Owner: IOWA ELECTRIC
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DOCUMENTATION REFERENCES:	NOTES:
<p>TEST REPORT (CHRON 7156). LIMITORQUE DC VALVE ACTUATORS FOR NUCLEAR POWER STATIONS. TEST PERFORMED SEPT 2, 1975 TO NOV 3, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT).</p> <p>C . LIMITORQUE SHOP ORDER NO. 600376A (CHRON 7157), QUALIFICATION TEST OF LIMITORQUE VALVE OPERATORS IN A SIMULATED REACTOR CONTAINMENT POST-ACCIDENT STEAM ENVIRONMENT, SEPT, 1972 (TEST PROFILE IS FIGURE 3 OF THIS REPORT).</p> <p>D . PROJECT NO. 600456 (CHRON 7158). NUCLEAR POWER STATION, QUALIFICATION TYPE TEST REPORT, LIMITORQUE VALVE ACTUATORS FOR PWR SERVICE. TEST PERFORMED JUNE 7, 1974 TO NOV 22, 1974. TEST PROFILE IS FIGURE 6 OF THIS REPORT.</p> <p>E . REPORT NO. 80027, PROJ NO. 600508 (CHRON 7159), LIMITORQUE VALVE ACTUATOR TEMPERATURE RELATED TO HIGH SUPERHEAT AMBIENT TEMPERATURES, DATED 10/18/78 (TEST PROFILE IS FIGURE 2 OF THIS REPORT).</p> <p>F . REPORT NO. 80058 (CHRON 7160), LIMITORQUE VALVE ACTUATOR QUALIFICATION FOR NUCLEAR POWER STATION SERVICE, DATED 1/11/80.</p> <p>G . BECHTEL ENGINEERING ANALYSIS OF LIMITORQUE INSULATION CLASS B MOTOR OPERATORS DATED 3/26/82 (CHRON 6775).</p> <p>H . AGING EVALUATION FORM L200-00B REV. 1, DATED 9/2/83 (CHRON 13248).</p> <p>I . SECTION VII.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 6.</p>	<p>2 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 250F IN REFERENCE A, TO 310F IN REFERENCE D, TO 340F IN REFERENCES B AND C, AND A SIMILAR SIZE VALVE OPERATOR (SMB-00) SUCCESSFULLY PASSED A HIGH TEMPERATURE TEST OF 385F IN REFERENCE E. REFERENCE G ANALYZED A TEMPERATURE QUALIFICATION CAPABILITY OF AT LEAST 300F FOR INSULATION CLASS B MOTORS.</p>

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: HIGH PRESSURE COOLANT INJECTION	Operating Time	30 DAYS	RAD DOSE IS BASED ON A 1 HOUR OPERA- TING TIME FOR A LOCA BILL OF MAT'L ORDER NUMBER 353176E OPERATOR S/N 138949 MOTOR S/N JY18312 MOTOR MFR IS PEERLESS
Plant I.D. Number: MO-2312 Component: MOTOR OPERATOR	Temperature (*F)	300	
Manufacturer: LIMITORQUE	Pressure (PSIG)	1.8	
Model Number: SMB-3, DC-CLASS B	Relative Humidity (%)	100	
Purchase Order Number: M-152A	Chemical Spray	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/HPCI PUMP DISCHARGE ISOLATION	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	9.4 E06	
Location: STEAM TUNNEL	Aging	40 YEARS	
Floor Elevation: 757'-6"	Submergence	NA	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (*F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:	Submergence		
Flood Level Elevation: Above Flood Level: Yes: No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	NO	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 06	P&ID: M123/D6				
Loc Dwg: E328/D3	Elec Scheme: E121/18	VDR ID: E41-FO06					
Mfgr Model Ref: M152A-9							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins:	Environment:	EQ Sys No:	P&ID:				
Loc Dwg:	Elec Scheme:	VDR ID:					
Mfgr Model Ref:							

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Facility: DUANE ARNOLD

Unit: 1

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-4, AC-CLASS B NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF A,C D,G	TYPE TEST/ ANALYSIS	NONE
	Temperature (°F)	140		SEE NOTE (1)	001		REF A,G	TYPE TEST/ ANALYSIS	NONE
	Pressure (PSIG)	0		SEE NOTE (2)	001		REF A,G	TYPE TEST/ ANALYSIS	NONE
	Relative Humidity (%)	100		100	001		REF A,B,C D,E,G	TYPE TEST/ ANALYSIS	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	5.9 E06		2.0 E07 SEE NOTE (4)	001		REF A,F	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (3)	001		REF. H	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT NO. B0003, PROJECT NO. 600461, QUALIFICATION TYPE TEST REPORT (CHRON 7155), LIMITORQUE VALVE ACTUATORS FOR CLASS 1E SERVICE OUTSIDE PRIMARY CONTAINMENT. TEST PERFORMED NOV. 13, 1974 TO JAN. 23, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT). B . REPORT NO. B0009, PROJECT NO. 600426, QUALIFICATION TYPE	1 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 250F IN REFERENCE A, AND QUALIFIED TO 300F BY ANALYSIS IN REFERENCE G. 2 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 25 PSIG IN REFERENCE A, AND QUALIFIED TO 105 PSIG BY ANALYSIS IN REFERENCE G.

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DOCUMENTATION REFERENCES:	NOTES:
<p>TEST REPORT (CHRON 7156). LIMITORQUE DC VALVE ACTUATORS FOR NUCLEAR POWER STATIONS. TEST PERFORMED SEPT 2, 1975 TO NOV 3, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT).</p> <p>C . LIMITORQUE SHOP ORDER NO. 600376A (CHRON 7157), QUALIFICATION TEST OF LIMITORQUE VALVE OPERATORS IN A SIMULATED REACTOR CONTAINMENT POST-ACCIDENT STEAM ENVIRONMENT, SEPT, 1972 (TEST PROFILE IS FIGURE 3 OF THIS REPORT).</p> <p>D . PROJECT NO. 600456 (CHRON 7158). NUCLEAR POWER STATION, QUALIFICATION TYPE TEST REPORT, LIMITORQUE VALVE ACTUATORS FOR PWR SERVICE. TEST PERFORMED JUNE 7, 1974 TO NOV 22, 1974. TEST PROFILE IS FIGURE 6 OF THIS REPORT.</p> <p>E . REPORT NO. 80027, PROJ NO. 600508 (CHRON 7159), LIMITORQUE VALVE ACTUATOR TEMPERATURE RELATED TO HIGH SUPERHEAT AMBIENT TEMPERATURES, DATED 10/18/78 (TEST PROFILE IS FIGURE 2 OF THIS REPORT).</p> <p>F . REPORT NO. 80058 (CHRON 7160), LIMITORQUE VALVE ACTUATOR QUALIFICATION FOR NUCLEAR POWER STATION SERVICE, DATED 1/11/80.</p> <p>G . BECHTEL ENGINEERING ANALYSIS OF LIMITORQUE INSULATION CLASS B MOTOR OPERATORS DATED 3/26/82 (CHRON 6775).</p> <p>H . AGING EVALUATION FORM L200-OOB REV. 1, DATED 9/2/83 (CHRON 13248).</p> <p>(REFERENCES SUMMARIZED IN SECTION IX.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 17.)</p>	<p>3 . QUALIFIED LIFE IS BASED ON OPERATION AT LEAST TWICE A YEAR AND LUBRICATION CHECKS AS FOLLOWS-</p> <p>A) MAIN GEAR CASE-CHECK LUBRICANT FOR PROPER LEVEL AND PRESENCE OF CONTAMINANTS AND LUBRICATE ZERK FITTING EVERY 18 MONTHS.</p> <p>B) GEARED LIMIT SWITCH-INSPECT LUBRICATION EVERY 36 MONTHS.</p> <p>4 . CLASS B AC MOTORS WERE SEPARATELY TESTED TO 2.0 E08 RADS IN ACCORDANCE WITH REFERENCE A.</p>

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Facility: DUANE ARNOLD

Unit: 1

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EQ Equip No: L200-08-005

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-1940 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-4, AC-CLASS B Purchase Order Number: M-137A Function/Service: REACTOR CORE COOLING/ RHR PUMP 1P-229B,D DISCHARGE FLOW CONTROL Accuracy: Spec: NA Location: NW CRNR RM Floor Elevation: 732'-0"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
	Temperature (*F)	140	353178F OPERATOR S/N
	Pressure (PSIG)	0	136617 MOTOR MFR IS
	Relative Humidity (%)	100	RELIANCE
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-2030 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-4, AC-CLASS B Purchase Order Number: M-137A Function/Service: REACTOR CORE COOLING/ RHR PUMPS 1P229A,C DISCHARGE FLOW CONTROL Accuracy: Spec: NA Location: SE CRNR RM Floor Elevation: 731'-4"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
	Temperature (*F)	140	373178F OPERATOR S/N
	Pressure (PSIG)	0	136618 MOTOR S/N
	Relative Humidity (%)	100	Y249632AFW MOTOR MFR IS
	Chemical Spray	NA	RELIANCE
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 09		P&ID: M119/E4	
Loc Dwg: M256/C2	Elec Scheme: E121/51			VDR ID: E11-FO48B			
Mfgr Model Ref:	V.P. M137A-9						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: Environment: EQ Sys No: P&ID:							
1974		HARSH		09		M120/E5	
Loc Dwg: M277/C2		Elec Scheme:		E 121/51		VDR ID: E11-FO48A	
Mfgr Model Ref:		V. P. M137A-9					

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATOR WITH MOTOR BRAKE Manufacturer: LIMITORQUE Model Number: SMB-5, AC-CLASS B NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF A, C D, G	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Temperature (°F)	277		SEE NOTE (2)	001		REF A, G	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Pressure (PSIG)	1.2		SEE NOTE (3)	001		REF A, G	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Relative Humidity (%)	100		100	001		REF A, B, C D, E, G	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	5.6 E06		2.0 E07	001		REF A, F	TYPE TEST	SEE NOTE (1)
	Aging	40 YEARS		40 YEARS SEE NOTE (4)	001		REF. H	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT NO. B0003, PROJECT NO. 600461, QUALIFICATION TYPE TEST REPORT (CHRON 7155), LIMITORQUE VALVE ACTUATORS FOR CLASS 1E SERVICE OUTSIDE PRIMARY CONTAINMENT. TEST PERFORMED NOV. 13, 1974 TO JAN. 23, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT). B . REPORT NO. B0009, PROJECT NO. 600426; QUALIFICATION TYPE	1 . MOTOR OPERATORS ARE QUALIFIED IN ACCORDANCE WITH REFERENCES A THROUGH H; SEE ACTION ITEM 19 FOR MOTOR BRAKES. 2 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 250F IN REFERENCE A, AND QUALIFIED TO 300F BY ANALYSIS IN REFERENCE G. 3 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 25 PSIG IN

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DOCUMENTATION REFERENCES:	NOTES:
<p>TEST REPORT (CHRON 7156). LIMITORQUE DC VALVE ACTUATORS FOR NUCLEAR POWER STATIONS. TEST PERFORMED SEPT 2, 1975 TO NOV 3, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT).</p> <p>C . LIMITORQUE SHOP ORDER NO. 600376A (CHRON 7157). QUALIFICATION TEST OF LIMITORQUE VALVE OPERATORS IN A SIMULATED REACTOR CONTAINMENT POST-ACCIDENT STEAM ENVIRONMENT, SEPT, 1972 (TEST PROFILE IS FIGURE 3 OF THIS REPORT).</p> <p>D . PROJECT NO. 600456 (CHRON 7158). NUCLEAR POWER STATION, QUALIFICATION TYPE TEST REPORT, LIMITORQUE VALVE ACTUATORS FOR PWR SERVICE. TEST PERFORMED JUNE 7, 1974 TO NOV 22, 1974. TEST PROFILE IS FIGURE 6 OF THIS REPORT.</p> <p>E . REPORT NO. B0027, PROJ NO. 600508 (CHRON 7159), LIMITORQUE VALVE ACTUATOR TEMPERATURE RELATED TO HIGH SUPERHEAT AMBIENT TEMPERATURES, DATED 10/18/78 (TEST PROFILE IS FIGURE 2 OF THIS REPORT).</p> <p>F . REPORT NO. B0058 (CHRON 7160), LIMITORQUE VALVE ACTUATOR QUALIFICATION FOR NUCLEAR POWER STATION SERVICE, DATED 1/11/80.</p> <p>G . BECHTEL ENGINEERING ANALYSIS OF LIMITORQUE INSULATION CLASS B MOTOR OPERATORS DATED 3/26/82 (CHRON 6775).</p> <p>H . AGING EVALUATION FORM L200-OOB REV. 1, DATED 9/2/83 (CHRON 13248).</p>	<p>REFERENCE A, AND QUALIFIED TO 105 PSIG BY ANALYSIS IN REFERENCE G.</p> <p>4 . QUALIFIED LIFE IS BASED ON OPERATION AT LEAST TWICE A YEAR AND LUBRICATION CHECKS AS FOLLOWS.</p> <p>A) MAIN GEAR CASE-GECK LUBRICANT FOR PROPER LEVEL AND PRESENCE OF CONTAMINANTS AND LUBRICATE ZERK FITTING EVERY 18 MONTHS.</p> <p>B) GEARED LIMIT SWITCH-INSPECT LUBRICATION EVERY 36 MONTHS.</p>

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 Facility: DUANE ARNOLD
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EQ Equip No: L200-09-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-1905 Component: MOTOR OPERATOR WITH MOTOR BRAKE Manufacturer: LIMITORQUE Model Number: SMB-5, AC-CLASS B Purchase Order Number: M-152A Function/Service: REACTOR CORE COOLING/ LPCI LOOP B ISOLATION Accuracy: Spec: NA Location: RHR VALVE ROOM Floor Elevation: 757' - 6"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
	Temperature (°F)	277	353176C OPERATOR S/N
	Pressure (PSIG)	1.2	140218 MOTOR S/N
	Relative Humidity (%)	100	1MA450563-G1 MOTOR MFR IS
	Chemical Spray	NA	RELIANCE BRAKE MFR
	Seismic	NA	IS DINGS BRAKE MODEL
	Radiation (Rad)	5.6 E06	6-83075-19
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-2003 Component: MOTOR OPERATOR WITH MOTOR BRAKE Manufacturer: LIMITORQUE Model Number: SMB-5, AC-CLASS B Purchase Order Number: M-152A Function/Service: REACTOR CORE COOLING/ LPCI LOOP A ISOLATION Accuracy: Spec: NA Location: RHR VALVE ROOM Floor Elevation: 757' - 6"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
	Temperature (°F)	277	353176C OPERATOR S/N
	Pressure (PSIG)	1.2	140219 MOTOR S/N
	Relative Humidity (%)	100	1MA450563-G2 MOTOR MFR IS
	Chemical Spray	NA	RELIANCE BRAKE MFR
	Seismic	NA	IS DINGS BRAKE MODEL
	Radiation (Rad)	5.6 E06	6-83075-19
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M119/F6 Loc Dwg: M268/G7 Elec Scheme: E121/52 VDR ID: E11-F015B Mfr Model Ref: V.P. M152A-4							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M120/G4 Loc Dwg: M248/D7 Elec Scheme: E121/52 VDR ID: E11-F015A Mfr Model Ref: V.P. M152A-4							

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-00, AC-CLASS B NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A,C,D G,I	TYPE TEST/ ANALYSIS	NONE
	Temperature (°F)	277		SEE NOTE (1)	005		REF. A,G,I	TYPE TEST/ ANALYSIS	NONE
	Pressure (PSIG)	1.2		SEE NOTE (2)	005		REF. A,G,I	TYPE TEST/ ANALYSIS	NONE
	Relative Humidity (%)	100		100	001		REF. A,B,C D,E G,I	TYPE TEST/ ANALYSIS	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.3 E07		2.0 E07 SEE NOTE (4)	005		REF. A,F,I	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (3)	001		REF. H,I	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT NO. B0003, PROJECT NO. 600461, QUALIFICATION TYPE TEST REPORT (CHRON 7155), LIMITORQUE VALVE ACTUATORS FOR CLASS 1E SERVICE OUTSIDE PRIMARY CONTAINMENT. TEST PERFORMED NOV. 13, 1974 TO JAN. 23, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT). B . REPORT NO. B0009, PROJECT NO. 600426, QUALIFICATION TYPE	1 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 250F IN REFERENCE A, AND QUALIFIED TO 300F BY ANALYSIS IN REFERENCE G. 2 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 25 PSIG IN REFERENCE A, AND QUALIFIED TO 105 PSIG BY ANALYSIS IN REFERENCE G.

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DOCUMENTATION REFERENCES:	NOTES:
<p>TEST REPORT (CHRON 7156). LIMITORQUE DC VALVE ACTUATORS FOR NUCLEAR POWER STATIONS. TEST PERFORMED SEPT 2, 1975 TO NOV 3, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT).</p> <p>C . LIMITORQUE SHOP ORDER NO. 600376A (CHRON 7157), QUALIFICATION TEST OF LIMITORQUE VALVE OPERATORS IN A SIMULATED REACTOR CONTAINMENT POST-ACCIDENT STEAM ENVIRONMENT, SEPT, 1972 (TEST PROFILE IS FIGURE 3 OF THIS REPORT).</p> <p>D . PROJECT NO. 600456 (CHRON 7158). NUCLEAR POWER STATION, QUALIFICATION TYPE TEST REPORT, LIMITORQUE VALVE ACTUATORS FOR PWR SERVICE. TEST PERFORMED JUNE 7, 1974 TO NOV 22, 1974. TEST PROFILE IS FIGURE 6 OF THIS REPORT.</p> <p>E . REPORT NO. 80027, PROJ NO. 600508 (CHRON 7159), LIMITORQUE VALVE ACTUATOR TEMPERATURE RELATED TO HIGH SUPERHEAT AMBIENT TEMPERATURES, DATED 10/18/78 (TEST PROFILE IS FIGURE 2 OF THIS REPORT).</p> <p>F . REPORT NO. 80058 (CHRON 7160), LIMITORQUE VALVE ACTUATOR QUALIFICATION FOR NUCLEAR POWER STATION SERVICE, DATED 1/11/80.</p> <p>G . BECHTEL ENGINEERING ANALYSIS OF LIMITORQUE INSULATION CLASS B MOTOR OPERATORS DATED 3/26/82 (CHRON 6775).</p> <p>H . AGING EVALUATION FORM L200-00B REV. 1, DATED 9/2/83 (CHRON 13248).</p> <p>I . SECTION VII.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 16.</p> <p>(REFERENCES SUMMARIZED IN SECTION IX.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 17.)</p>	<p>3 . QUALIFIED LIFE IS BASED ON OPERATION AT LEAST TWICE A YEAR AND LUBRICATION CHECKS AS FOLLOWS-</p> <p>A) MAIN GEAR CASE-CHECK LUBRICANT FOR PROPER LEVEL AND PRESENCE OF CONTAMINANTS AND LUBRAICATE ZERK FITTING EVERY 18 MONTHS.</p> <p>B) GEARED LIMIT SWITCH-INSPECT LUBRICATION EVERY 36 MONTHS.</p> <p>4 . CLASS B AC MOTORS WERE SEPARATELY TESTED TO 2.0 E08 RADS IN ACCORDANCE WITH REFERENCE A.</p>

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 Unit: 1
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EQ Equip No: L200-10-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-1912 Component: MOTOR OPERATOR	Temperature (°F)	140	353178C OPERATOR S/N
Manufacturer: LIMITORQUE	Pressure (PSIG)	0	134314 MOTOR S/N
Model Number: SMB-OO, AC-CLASS B	Relative Humidity (%)	100	1B600012FW MOTOR MFR IS
Purchase Order Number: M-137A	Chemical Spray	NA	RELIANCE
Function/Service: REACTOR CORE COOLING/ RHR PUMP 1P-229B SUCTION LINE ISOLATION FROM RECIRC SYSTEM Accuracy: Spec:	Seismic	NA	
NA Location: NW CRNR RM	Radiation (Rad)	5.9 E06	
Floor Elevation: 716'-9"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-1913 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-OO, AC-CLASS B Purchase Order Number: M-137A Function/Service: REACTOR CORE COOLING/ RHR PUMP 1P-229B SUCTION LINE ISOLA- TION FROM SUPPRESSION POOL Accuracy: Spec: NA Location: NW CRNR RM Floor Elevation: 716'-9"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 353178C OPERATOR S/N 134312 MOTOR S/N 1B600012F23 MOTOR MFR IS RELIANCE
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M119/C7 Loc Dwg: M245/F7 Elec Scheme: E121/44 VDR ID: E11-FOO6B Mfr Model Ref: V.P. M137A-70							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M119/C7 Loc Dwg: E316/F7 Elec Scheme: E121/43 VDR ID: E11-FOO4B Mfr Model Ref: V.P. M137A-70							

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 Facility: DUANE ARNOLD
 Unit: 1
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EQ Equip No: L200-10-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-1920 Component: MOTOR OPERATOR	Temperature (°F)	140	353178C OPERATOR S/N
Manufacturer: LIMITORQUE	Pressure (PSIG)	0	134318 MOTOR MFR IS
Model Number: SMB-OO, AC-CLASS B	Relative Humidity (%)	100	RELIANCE
Purchase Order Number: M-137A	Chemical Spray	NA	
Function/Service: REACTOR CORE COOLING/ RHR PUMP 1P-229D SUCTION LINE ISOLA- TION FROM RECIRC SYS	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	5.9 E06	
Location: NW CRNR RM	Aging	40 YEARS	
Floor Elevation: 716'-9"			
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-1921 Component: MOTOR OPERATOR	Temperature (°F)	140	353178C OPERATOR S/N
Manufacturer: LIMITORQUE	Pressure (PSIG)	0	134313 MOTOR S/N
Model Number: SMB-OO, AC-CLASS B	Relative Humidity (%)	100	1B6000112F1 MOTOR MFR IS
Purchase Order Number: M-137A	Chemical Spray	NA	RELIANCE
Function/Service: REACTOR CORE COOLING/ RHR PUMP 1P-229D SUCTION LINE ISOLA- TION FROM SUPPRESSION POOL	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	5.9 E06	
Location: NW CRNR RM	Aging	40 YEARS	
Floor Elevation: 732'-0"			
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 09	P&ID: M119/C8				
Loc Dwg: M245/F7	Elec Scheme: E121/44	VDR ID: E11-FOO6D					
Mfgr Model Ref: V.P. M137A-70							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 09	P&ID: M119/C7				
Loc Dwg: M245/F7	Elec Scheme: E121/43	VDR ID: E11-FOO4D					
Mfgr Model Ref: V.P. M137A-70							

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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EQ Equip No: L200-10-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-1933 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-00, AC-CLASS B Purchase Order Number: M-137A Function/Service: CONTAINMENT HEAT RE- MOVAL/SUPPRESSION POOL SPRAY ISOLATION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 353178H OPERATOR S/N 136177 MOTOR MFR IS RELIANCE
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-1936 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-00, AC-CLASS B Purchase Order Number: M-137A Function/Service: REACTOR CORE COOLING/ ISOLATION OF RHR DISCHARGE TO THE WASTE SURGE TANK Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 353178G OPERATOR S/N 136267 MOTOR S/N 1B600014FW1 MOTOR MFR IS RELIANCE
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M119/F5 Loc Dwg: M266/G7 Elec Scheme: E121/59 VDR ID: E11-F027B Mfr Model Ref: V.P. M137A-70							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M119/D6 Loc Dwg: M246/C8 Elec Scheme: E122/7 VDR ID: E11-F040 Mfr Model Ref: V.P. M137A-70							

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 Facility: DUANE ARNOLD
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EQ Equip No: L200-10-009

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 353178C OPERATOR S/N 134315 MOTOR S/N 1B600012FWS MOTOR MFR IS RELIANCE
Plant I.D. Number: MO-2011 Component:	Temperature (°F)	140	
MOTOR OPERATOR	Pressure (PSIG)	0	
Manufacturer:	Relative Humidity (%)	100	
LIMITORQUE	Chemical Spray	NA	
Model Number:	Seismic	NA	
SMB-00, AC-CLASS B	Radiation (Rad)	5.9 EO6	
Purchase Order Number:	Aging	40 YEARS	
M-137A	Submergence	NA	
Function/Service:			
REACTOR CORE COOLING/ RHR PUMP 1P-229A SUCTION LINE ISOLA- TION FROM RECIRC SYS			
Accuracy: Spec:			
NA			
Location:			
SE CRNR RM			
Floor Elevation:			
716' -9"			
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 353178C OPERATOR S/N 134316 MOTOR S/N 1B600012FWT MOTOR MFR IS RELIANCE
Plant I.D. Number: MO-2012 Component:	Temperature (°F)	140	
MOTOR OPERATOR	Pressure (PSIG)	0	
Manufacturer:	Relative Humidity (%)	100	
LIMITORQUE	Chemical Spray	NA	
Model Number:	Seismic	NA	
SMB-00, AC-CLASS B	Radiation (Rad)	5.9 EO6	
Purchase Order Number:	Aging	40 YEARS	
M-137A	Submergence	NA	
Function/Service:			
REACTOR CORE COOLING/ RHR PUMP 1P-229A SUCTION LINE ISOLA- TION FROM SUPPRESSION POOL			
Accuracy: Spec:			
NA			
Location:			
SE CRNR RM			
Floor Elevation:			
716' -9"			
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M120/C3 Loc Dwg: M265/F2 Elec Scheme: E121/44 VDR ID: E11-FOO6A Mfr Model Ref: V.P. M137A-70							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M120/C3 Loc Dwg: E317/E2 Elec Scheme: E121/43 VDR ID: E11-FOO4A Mfr Model Ref: V.P. M137A-70							

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 Facility: OUANE ARNOLD
 Unit: 1
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EQ Equip No: L200-10-011

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-2015 Component: MOTOR OPERATOR	Temperature (*F)	140	353178C OPERATOR S/N
Manufacturer: LIMITORQUE	Pressure (PSIG)	0	134317 MOTOR S/N
Model Number: SMB-00, AC-CLASS B	Relative Humidity (%)	100	1B600012FW MOTOR MFR IS
Purchase Order Number: M-137A	Chemical Spray	NA	RELIANCE
Function/Service: REACTOR CORE COOLING/ RHR PUMP 1P-229C SUCTION LINE ISOLA- TION FROM SUPPRESSION POOL Accuracy: Spec:	Seismic	NA	
NA Location: SE CRNR RM	Radiation (Rad)	5.9 EO6	
Floor Elevation: 716' -9"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-2016 Component: MOTOR OPERATOR	Temperature (*F)	140	353178C OPERATOR S/N
Manufacturer: LIMITORQUE	Pressure (PSIG)	0	134319 MOTOR MFR IS
Model Number: SMB-00, AC-CLASS B	Relative Humidity (%)	100	RELIANCE
Purchase Order Number: M-137A	Chemical Spray	NA	
Function/Service: REACTOR CORE COOLING/ RHR PUMP 1P-229C SUCTION LINE ISOLA- TION FROM RECIRC SYS	Seismic	NA	
Accuracy: Spec: NA Location: SE CRNR RM	Radiation (Rad)	5.9 EO6	
Floor Elevation: 716' -9"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974		Environment: HARSH		EQ Sys No: 09		P&ID: M120/C2	
Loc Dwg: E317/E2		Elec Scheme: E121/43		VDR ID: E11-FOO4C			
Mfr Model Ref: V.P. M137A-70							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974		Environment: HARSH		EQ Sys No: 09		P&ID: M120/C2	
Loc Dwg: M317/E2		Elec Scheme: E121/44		VDR ID: E11-FOO6			
Mfr Model Ref: V.P. M137A-70							

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EQ Equip No: L200-10-014

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CORE SPRAY Plant I.D. Number: MO-2120 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-OO, AC-CLASS B Purchase Order Number: M-137A Function/Service: REACTOR CORE COOLING/ CORE SPRAY PUMP 1P-211B SUCTION ISOLA TION FROM SUPPRESSION POOL Accuracy: Spec: NA Location: NW CRNR RM Floor Elevation: 716'-9"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 353178E OPERATOR S/N 134361 MOTOR S/N 1B600013F1 MOTOR MFR IS RELIANCE
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-2006 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-OO, AC-CLASS B Purchase Order Number: M-137A Function/Service: CONTAINMENT HEAT RE MOVAL/SUPPRESSION POOL SPRAY ISOLATION Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716'-9"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 353178H OPERATOR S/N 136178 MOTOR S/N 1B600015FW2 MOTOR MFR IS RELIANCE
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 08 P&ID: M121/B5 Loc Dwg: E316/D8 Elec Scheme: E121/4 VDR ID: E21-FO01B Mfr Model Ref: V.P. M137A-70							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M120/F4 Loc Dwg: M256/D7 Elec Scheme: E121/59 VDR ID: E11-FO27A Mfr Model Ref: V.P. M137A-70							

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EQ Equip No: L200-10-016

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL SERVICE WATER Plant I.D. Number: MO-1943A Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-00, AC-CLASS B Purchase Order Number: M-137A Function/Service: REACTOR CORE COOLING /RHR SERVICE WATER PUMPS A,C SERVICE WATER SUPPLY TO THE RHR SYSTEM Accuracy: Spec: NA Location: SE CRNR RM Floor Elevation: 736'-6"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
	Temperature (*F)	140	353178J OPERATOR S/N
	Pressure (PSIG)	0	141056 MOTOR S/N
	Relative Humidity (%)	100	500935KW0001 MOTOR MFR IS
	Chemical Spray	NA	RELIANCE
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL SERVICE WATER Plant I.D. Number: MO-1943B Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-00, AC-CLASS B Purchase Order Number: M-137A Function/Service: REACTOR CORE COOLING /RHR SERVICE WATER PUMPS B,D SERVICE WATER SUPPLY TO THE RHR SYSTEM Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
	Temperature (*F)	277	360982A OPERATOR S/N
	Pressure (PSIG)	1.2	157831 MOTOR S/N
	Relative Humidity (%)	100	447026DX MOTOR MFR IS
	Chemical Spray	NA	RELIANCE
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974		Environment: HARSH		EQ Sys No: 13		P&ID: M113/G8	
Loc Dwg: E317/E3		Elec Scheme:		E121/45		VDR ID: E11-F073A	
Mfrgr Model Ref:		V.P. M137A-70					

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH		EQ Sys No: 13		P&ID: M113/G8		
Loc Dwg: E317/F7	Elec Scheme: E121/45		VDR ID: E11-F073B				
Mfr Model Ref: V.P. M137A-70							

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EQ Equip No: L200-10-018

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CORE SPRAY Plant I.D. Number: MO-2100 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-00, AC-CLASS B Purchase Order Number: M-137A Function/Service: REACTOR CORE COOLING/ CORE SPRAY PUMP 1P-211A SUCTION FROM THE SUPPRESSION POOL Accuracy: Spec: NA Location: SE CRNR RM Floor Elevation: 716'-9" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
	Temperature (*F)	140	353178E OPERATOR S/N
	Pressure (PSIG)	0	134360 MOTOR S/N
	Relative Humidity (%)	100	1B600013FW2 MOTOR MFR IS
	Chemical Spray	NA	RELIANCE
	Seismic	NA	
	Radiation (Rad)	5.9 EO6	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CORE SPRAY Plant I.D. Number: MO-2146 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-00, AC-CLASS B Purchase Order Number: M-151A Function/Service: REACTOR CORE COOLING/ CORE SPRAY PUMP 1P-211B SUPPRESSION POOL SUCTION ISOLATION Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
	Temperature (*F)	277	353177J OPERATOR S/N
	Pressure (PSIG)	1.2	139174 MOTOR S/N
	Relative Humidity (%)	100	463417KN0001 MOTOR MFR IS
	Chemical Spray	NA	RELIANCE
	Seismic	NA	
	Radiation (Rad)	1.3 EO7	
	Aging	40 YEARS	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E317/D3 Mfr Model Ref: V.P. M137A-70 Environment: HARSH EQ Sys No: 08 P&ID: M121/B5 Elec Scheme: E121/4 VDR ID: E21-FO01A							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E316/C7 Mfr Model Ref: V.P. M151A-70 Environment: HARSH EQ Sys No: 08 P&ID: M121/C5 Elec Scheme: E121/4 VDR ID: E21-F038A							

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CORE SPRAY	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-2147 Component: MOTOR OPERATOR	Temperature (°F)	277	353177J OPERATOR S/N
Manufacturer: LIMITORQUE	Pressure (PSIG)	1.2	139175 MOTOR S/N
Model Number: SMB-00, AC-CLASS B	Relative Humidity (%)	100	463417KN0002 MOTOR MFR IS
Purchase Order Number: M-151A	Chemical Spray	NA	RELIANCE
Function/Service: REACTOR CORE COOLING/ CORE SPRAY PUMP 1P-211A SUPPRESSION POOL SUCTION ISOLATION Accuracy: Spec: NA	Seismic	NA	
Location: TORUS ROOM SOUTH	Radiation (Rad)	1.3 E07	
Floor Elevation: 716'-9"	Aging	40 YEARS	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (°F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:			
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:	Submergence		

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 08	P&ID: M121/B5				
Loc Dwg: E317/D5	Elec Scheme: E121/4	VDR ID: E21-F038B					
Mfgr Model Ref: V.P. M151A-10							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins:	Environment:	EQ Sys No:	P&ID:				
Loc Dwg:	Elec Scheme:	VDR ID:					
Mfgr Model Ref:							

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Owner: IOWA ELECTRIC
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-00,DC-CLASS B NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	1 HOUR		30 DAYS	002		REF. A,B,C D,G,I	TYPE TEST/ ANALYSIS	NONE
	Temperature (°F)	300		SEE NOTE (2)	004		REF. A,B,C D,E G,I	TYPE TEST/ ANALYSIS	NONE
	Pressure (PSIG)	1.8		105	004		REF. B,C G,I	TYPE TEST/ ANALYSIS	NONE
	Relative Humidity (%)	100		100	002		REF. A,B,C D,E G,I	TYPE TEST/ ANALYSIS	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	9.4 E06		2.0 E07	004		REF. A,F G,I	TYPE TEST/ ANALYSIS	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	002		REF. H,I	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT NO. B0003, PROJECT NO. 600461, QUALIFICATION TYPE TEST REPORT (CHRON 7155), LIMITORQUE VALVE ACTUATORS FOR CLASS 1E SERVICE OUTSIDE PRIMARY CONTAINMENT. TEST PERFORMED NOV. 13, 1974 TO JAN. 23, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT). B . REPORT NO. B0009, PROJECT NO. 600426, QUALIFICATION TYPE	1 . QUALIFIED LIFE IS BASED ON OPERATION AT LEAST TWICE A YEAR AND LUBRICATION CHECKS AS FOLLOWS- A) MAIN GEAR CASE-CHECK LUBRICANT FOR PROPER LEVEL AND PRESENCE OF CONTAMINANTS AND LUBRICATE ZERK FITTING EVERY 18 MONTHS. B) GEARED LIMIT SWITCH-INSPECT LUBRICATION EVERY 36 MONTHS.

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DOCUMENTATION REFERENCES:	NOTES:
<p>TEST REPORT (CHRON 7156). LIMITORQUE DC VALVE ACTUATORS FOR NUCLEAR POWER STATIONS. TEST PERFORMED SEPT 2, 1975 TO NOV 3, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT).</p> <p>C . LIMITORQUE SHOP ORDER NO. 600376A (CHRON 7157), QUALIFICATION TEST OF LIMITORQUE VALVE OPERATORS IN A SIMULATED REACTOR CONTAINMENT POST-ACCIDENT STEAM ENVIRONMENT, SEPT, 1972 (TEST PROFILE IS FIGURE 3 OF THIS REPORT).</p> <p>D . PROJECT NO. 600456 (CHRON 7158). NUCLEAR POWER STATION, QUALIFICATION TYPE TEST REPORT, LIMITORQUE VALVE ACTUATORS FOR PWR SERVICE. TEST PERFORMED JUNE 7, 1974 TO NOV 22, 1974. TEST PROFILE IS FIGURE 6 OF THIS REPORT.</p> <p>E . REPORT NO. B0027, PROJ NO. 600508 (CHRON 7159), LIMITORQUE VALVE ACTUATOR TEMPERATURE RELATED TO HIGH SUPERHEAT AMBIENT TEMPERATURES, DATED 10/18/78 (TEST PROFILE IS FIGURE 2 OF THIS REPORT).</p> <p>F . REPORT NO. B0058 (CHRON 7160), LIMITORQUE VALVE ACTUATOR QUALIFICATION FOR NUCLEAR POWER STATION SERVICE, DATED 1/11/80.</p> <p>G . BECHTEL ENGINEERING ANALYSIS OF LIMITORQUE INSULATION CLASS B MOTOR OPERATORS DATED 3/26/82 (CHRON 6775).</p> <p>H . AGING EVALUATION FORM L200-OOB REV. 1, DATED 9/2/83 (CHRON 13248).</p> <p>I . SECTION VII.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 5, 122, AND 124.</p> <p>(REFERENCES SUMMARIZED IN SECTION IX.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 4.)</p>	<p>2 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 250F IN REFERENCE A, TO 310F IN REFERENCE D, TO 340F IN REFERENCES B AND C, AND A SIMILAR SIZE VALVE OPERATOR (SMB-00) SUCCESSFULLY PASSED A HIGH TEMPERATURE TEST OF 385F IN REFERENCE E. REFERENCE G ANALYZED A TEMPERATURE QUALIFICATION CAPABILITY OF AT LEAST 300F FOR INSULATION CLASS B MOTORS.</p>

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EQ Equip No: L200-13-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: HIGH PRESSURE COOLANT INJECTION Plant I.D. Number: MO-2321 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-00,DC-CLASS B Purchase Order Number: M-151A Function/Service: PRIMARY CONTAINMENT ISOLATION/HPCI SUPPRESSION POOL SUCTION ISOLATION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	1 HOUR	BILL OF MAT'L ORDER NUMBER 353177C OPERATOR S/N 137972 MOTOR S/N JY19204 MOTOR MFR IS PEERLESS
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.7 E06	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR CORE ISOLATION COOLING Plant I.D. Number: MO-2401 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-00,DC-CLASS B Purchase Order Number: M-133A Function/Service: PRIMARY CONTAINMENT ISOLATION/RCIC TURBINE MAIN STEAM LINE ISOLATION Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757'-6" Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Operating Time	1 HOUR	BILL OF MAT'L ORDER NUMBER 353179E OPERATOR S/N 137973 MOTOR S/N JY18215 MOTOR MFR IS PEERLESS
	Temperature (°F)	300	
	Pressure (PSIG)	1.8	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.4 E06	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	NO	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E317/D4 Mfr Model Ref: V.P. M151A-2 Environment: HARSH Elec Scheme: E121/23 EQ Sys No: 06 P&ID: M123/A7 VDR ID: E41-F042							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	YES	NO	NA
Qual Life Begins: 1974 Loc Dwg: E328/E4 Mfr Model Ref: V.P. M133A-13 Environment: HARSH Elec Scheme: E121/30 EQ Sys No: 17 P&ID: M124/G6 VDR ID: E51-FO08							

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 EQ Equip No: L200-13-005

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EQ Equip No: L200-13-007

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR CORE ISOLATION COOLING	Operating Time	1 HOUR	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-2512 Component:	Temperature (*F)	300	353179F OPERATOR S/N
MOTOR OPERATOR	Pressure (PSIG)	1.8	141053 MOTOR S/N
Manufacturer: LIMITORQUE	Relative Humidity (%)	100	JY18214 MOTOR MFR IS
Model Number: SMB-00,DC-CLASS B	Chemical Spray	NA	PEERLESS
Purchase Order Number: M-133A	Seismic	NA	
Function/Service: REACTOR CORE COOLING/ RCIC PUMP 1P-226 DISCHARGE ISOLATION	Radiation (Rad)	9.4 E06	
Accuracy: Spec: NA Location: STEAM TUNNEL	Aging	40 YEARS	
Floor Elevation: 757'-6"	Submergence	NA	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: NUCLEAR BOILER	Operating Time	1 HOUR	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-4424 Component:	Temperature (*F)	130	353179H OPERATOR S/N
MOTOR OPERATOR	Pressure (PSIG)	0	137974 MOTOR S/N
Manufacturer: LIMITORQUE	Relative Humidity (%)	100	JY13216 MOTOR MFR IS
Model Number: SMB-00,DC-CLASS B	Chemical Spray	NA	PEERLESS
Purchase Order Number: M-133A	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE CONDENSATE DRAIN ISOLATION	Radiation (Rad)	9.4 E06	
Accuracy: Spec: NA Location: STEAM TUNNEL	Aging	40 YEARS	
Floor Elevation: 757'-6"	Submergence	NA	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	YES	NO	NA
Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 17	P&ID: M125/D5				
Loc Dwg: E328/E3	Elec Scheme: E121/40	VDR ID: E51-F013					
Mfgr Model Ref: V.P. M133A-7							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 03	P&ID: M114/B3				
Loc Dwg: E328/E4	Elec Scheme: E122/5	VDR ID: B21-F019					
Mfgr Model Ref: V.P. M133A-76-2-4							

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EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR WATER CLEANUP	Operating Time	1 HOUR	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-2701 Component: MOTOR OPERATOR	Temperature (*F)	214	353175B OPERATOR S/N
Manufacturer: LIMITORQUE	Pressure (PSIG)	1.1	138245 MOTOR S/N
Model Number: SMB-OO,DC-CLASS B	Relative Humidity (%)	100	JY18207 MOTOR MFR IS
Purchase Order Number: M-134A	Chemical Spray	NA	RELIANCE
Function/Service: CONTAINMENT ISOLATION /RWCU LINE OUTBOARD ISOLATION	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	1.1 E06	
Location: RWCU HEAT EXCH ROOM	Aging	40 YEARS	
Floor Elevation: 786'-0"	Submergence	NA	
Flood Level Elevation: 786'-7" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (*F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:	Submergence		
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 41 P&ID: M127/F7							
Loc Dwg: E321/E6 Elec Scheme: E122/5 VDR ID: G31-FOO4							
Mfgr Model Ref: V.P. M134A-3							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins: Environment: EQ Sys No: P&ID:							
Loc Dwg: Elec Scheme: VDR ID:							
Mfgr Model Ref:							

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, DC CLASS B NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	002		REF. A,B,C D,G,I	TYPE TEST/ ANALYSIS	NONE
	Temperature (°F)	277		SEE NOTE (2)	002		REF. A,B,C D,E G,I	TYPE TEST/ ANALYSIS	NONE
	Pressure (PSIG)	1.2		105	002		REF. B,C G,I	TYPE TEST/ ANALYSIS	NONE
	Relative Humidity (%)	100		100	001		REF. A,B,C D,E G,I	TYPE TEST/ ANALYSIS	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.3 E07		2.0 E07	002		REF. A,F G,I	TYPE TEST/ ANALYSIS	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	001		REF. H,I	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT NO. B0003, PROJECT NO. 600461, QUALIFICATION TYPE TEST REPORT (CHRON 7155). LIMITORQUE VALVE ACTUATORS FOR CLASS 1E SERVICE OUTSIDE PRIMARY CONTAINMENT. TEST PERFORMED NOV. 13, 1974 TO JAN. 23, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT). B . REPORT NO. B0009, PROJECT NO. 600426, QUALIFICATION TYPE	1 . QUALIFIED LIFE IS BASED ON OPERATION AT LEAST TWICE A YEAR AND LUBRICATION CHECKS AS FOLLOWS- A) MAIN GEAR CASE-CHECK LUBRICANT FOR PROPER LEVEL AND PRESENCE OF CONTAMINANTS AND LUBRICATE ZERK FITTING EVERY 18 MONTHS. B) GEARED LIMIT SWITCH-INSPECT LUBRICATION EVERY 36 MONTHS.

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DOCUMENTATION REFERENCES:	NOTES:
<p>TEST REPORT (CHRON 7156). LIMITORQUE DC VALVE ACTUATORS FOR NUCLEAR POWER STATIONS. TEST PERFORMED SEPT 2, 1975 TO NOV 3, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT).</p> <p>C . LIMITORQUE SHOP ORDER NO. 600376A (CHRON 7157), QUALIFICATION TEST OF LIMITORQUE VALVE OPERATORS IN A SIMULATED REACTOR CONTAINMENT PDST-ACCIDENT STEAM ENVIRONMENT, SEPT, 1972 (TEST PROFILE IS FIGURE 3 OF THIS REPORT).</p> <p>D . PROJECT NO. 600456 (CHRON 7158). NUCLEAR POWER STATION, QUALIFICATION TYPE TEST REPORT, LIMITORQUE VALVE ACTUATORS FOR PWR SERVICE. TEST PERFORMED JUNE 7, 1974 TO NOV 22, 1974. TEST PROFILE IS FIGURE 6 OF THIS REPORT.</p> <p>E . REPORT NO. 80027, PROJ NO. 600508 (CHRON 7159), LIMITORQUE VALVE ACTUATOR TEMPERATURE RELATED TO HIGH SUPERHEAT AMBIENT TEMPERATURES, DATED 10/18/78 (TEST PROFILE IS FIGURE 2 OF THIS REPORT).</p> <p>F . REPORT NO. 80058 (CHRON 7160), LIMITORQUE VALVE ACTUATOR QUALIFICATION FOR NUCLEAR POWER STATION SERVICE, DATED 1/11/80.</p> <p>G . BECHTEL ENGINEERING ANALYSIS OF LIMITORQUE INSULATION CLASS B MOTOR OPERATORS DATED 3/26/82 (CHRON 6775).</p> <p>H . AGING EVALUATION FORM L200-OOB REV. 1, DATED 9/2/83 (CHRON 13248).</p> <p>I . SECTION VII.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 8 AND 121.</p> <p>(REFERENCES SUMMARIZED IN SECTION IX.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 3.)</p>	<p>2 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 250F IN REFERENCE A, TO 310F IN REFERENCE D, TO 340F IN REFERENCES B AND C, AD A SMALLER SIZE VALVE OPERATOR (SMB-00) SUCCESSFULLY PASSED A HIGH TEMPERATURE TEST OF 385F IN REFERENCE E. REFERENCE G ANALYZED A TEMPERATURE QUALIFICATION CAPABILITY OF AT LEAST 300F INSULATION FOR CLASS B MOTORS.</p>

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EQ Equip No: L200-14-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR CORE ISOLATION COOLING Plant I.D. Number: MO-2517 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, DC CLASS B Purchase Order Number: M-137B Function/Service: REACTOR CORE COOLING/ RCIC PUMP SUCTION ISOLATION FROM SUPPRESSION POOL Accuracy: Spec: NA Location: RCIC ROOM Floor Elevation: 716'-9"	Operating Time	1 HOUR	BILL OF MAT'L ORDER NUMBER 3560591 OPERATOR S/N 142172 MOTOR S/N LY21627 MOTOR MFR IS PEERLESS
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.6 E05	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-1937 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, DC CLASS B Purchase Order Number: M-137B Function/Service: REACTOR CORE COOLING/ RHR DISCHARGE TO THE WASTE SURGE TANK ISOLATION Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716'-9"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 356059H OPERATOR S/N 144271 MOTOR S/N AZ21620 MOTOR MFR IS PEERLESS
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins:	Environment:		EQ Sys No:		P&ID:		
1974	HARSH		17		M125/F4		
Loc Dwg:	E317/C5	Elec Scheme:		E121/33	VDR ID: E51-F029		
Mfr Model Ref:	V.P. M137B-43						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M119/D6							
Loc Dwg: M246/8C Elec Scheme: E122/15 VDR ID: E11-FO49							
Mfr Model Ref: V.P. M137B-43							

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR CORE ISOLATION COOLING Plant I.D. Number: MO-2516 Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-000, DC CLASS B Purchase Order Number: M-137 Function/Service: REACTOR CORE COOLING/ RCIC PUMP SUCTION ISOLATION FROM SUPPRESSION POOL Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9"	Operating Time	1 HOUR	BILL OF MAT'L ORDER NUMBER 356059E OPERATOR S/N 1414'16 MOTOR S/N LY21626 MOTOR MFR IS PEERLESS
	Temperature (*F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: Plant I.D. Number: Component: Manufacturer: Model Number: Purchase Order Number: Function/Service: Accuracy: Spec: Location: Floor Elevation: Flood Level Elevation: Above Flood Level: Yes: No:	Operating Time		
	Temperature (*F)		
	Pressure (PSIG)		
	Relative Humidity (%)		
	Chemical Spray		
	Seismic		
	Radiation (Rad)		
	Aging		
	Submergence		

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	YES	YES	YES	YES	NA
Qual Life Begins: Environment: EQ Sys No: P&ID: 1974 HARSH 17 M125/B5 Loc Dwg: E317/E6 Elec Scheme: E121/33 VDR ID: E51-F031 Mfr Model Ref: V.P. M137B-34							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins: Environment: EQ Sys No: P&ID: Loc Dwg: Elec Scheme: VDR ID: Mfr Model Ref:							

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-00, AC-CLASS H NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. C,D	TYPE TEST	NONE
	Temperature (°F)	SEE GENERAL NOTE 6		SEE NOTE (3)	001		REF. B,C,D,E	TYPE TEST	NONE
	Pressure (PSIG)	SEE GENERAL NOTE 6		105	001		REF. B,C	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A,B,C,D,E	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (2)	001		REF. D	TYPE TEST	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	4.3 E07		2.0 E08	001		REF. C,D,F	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	001		REF. G	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT NO. B0003, PROJECT NO. 600461, QUALIFICATION TYPE TEST REPORT (CHRON 7155), LIMITORQUE VALVE ACTUATORS FOR CLASS 1E SERVICE OUTSIDE PRIMARY CONTAINMENT. TEST PERFORMED NOV. 13, 1974 TO JAN. 23, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT). B . REPORT NO. B0009, PROJECT NO. 600426, QUALIFICATION TYPE	1 . QUALIFIED LIFE OF 40 YEARS REQUIRES: A) CHECK FOR PROPER OPERATION AT LEAST TWICE A YEAR B) CHECK MAIN GEAR CASE LUBRICANT FOR PROPER LEVEL AND PRESENCE OF CONTAMINANTS EVERY 18 MONTHS. C) LUBRICATE ZERK FITTINGS EVERY 18 MONTHS. D) INSPECT GEARED LIMIT SWITCH LUBRICATION EVERY 36 MONTHS.

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DOCUMENTATION REFERENCES:	NOTES:
<p>TEST REPORT (CHRON 7156). LIMITORQUE DC VALVE ACTUATORS FOR NUCLEAR POWER STATIONS. TEST PERFORMED SEPT 2, 1975 TO NOV 3, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT).</p> <p>C . LIMITORQUE SHOP ORDER NO. 600376A (CHRON 7157), QUALIFICATION TEST OF LIMITORQUE VALVE OPERATORS IN A SIMULATED REACTOR CONTAINMENT POST-ACCIDENT STEAM ENVIRONMENT, SEPT, 1972 (TEST PROFILE IS FIGURE 3 OF THIS REPORT).</p> <p>D . PROJECT NO. 600456 (CHRON 7158), NUCLEAR POWER STATION QUALIFICATION TYPE TEST REPORT, LIMITORQUE VALVE ACTUATORS FOR PWR SERVICE. TEST PERFORMED JUN 7, 1974 TO NOV 22, 1974 (TEST PROFILE IS FIGURE 6 OF THIS REPORT).</p> <p>E . REPORT NO. BOO27, PROJ NO. 600508 (CHRON 7159), LIMITORQUE VALVE ACTUATOR TEMPERATURE RELATED TO HIGH SUPERHEAT AMBIENT TEMPERATURES, DATED 10/18/78 (TEST PROFILE IS FIGURE 2 OF THIS REPORT).</p> <p>F . REPORT NO. BOO58 (CHRON 7160), LIMITORQUE VALVE ACTUATOR QUALIFICATION FOR NUCLEAR POWER STATION SERVICE, DATED 1/11/80.</p> <p>G . AGING EVALUATION FORM L200-OOH REV. 1, DATED 8/13/83 (CHRON 12986).</p>	<p>E) REPLACE MELAMINE TORQUE AND POSITION SWITCHES EVERY 12 YEARS (BASED ON CONTINUOUS EXPOSURE TO HIGH LOCAL AMBIENT TEMPERATURE OF 240F).</p> <p>2 . REPRESENTATIVE VALVE OPERATORS WERE SUBJECTED TO SPRAY CHEMISTRY DESCRIBED IN IEEE STANDARD 382-1972, TABLE 1, WHICH IS MORE SEVERE THAN DEMINERALIZED WATER SPRAY.</p> <p>3 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 310F IN REFERENCE D, TO 340F IN REFERENCES B AND C, AND A SIMILAR SIZE VALVE OPERATOR (SMB-00) SUCCESSFULLY PASSED A HIGH TEMPERATURE TEST OF 385F IN REFERENCE E.</p>

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: L200-16-001

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Sheet No. 207
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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-1900 Component: MOTOR OPERATOR	Temperature (°F)	SEE GENERAL NOTE 6	353170D1 OPERATOR S/N
Manufacturer: LIMITORQUE	Pressure (PSIG)	SEE GENERAL NOTE 6	137097 MOTOR MFR IS
Model Number: SMB-00, AC-CLASS H	Relative Humidity (%)	100	RELIANCE
Purchase Order Number: M-133A	Chemical Spray	DEMIN WATER	
Function/Service: REACTOR CORE COOLING /REACTOR VESSEL HEAD SPRAY ISOLATION	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	4.3 E07	
Location: DRYWELL	Aging	40 YEARS	
Floor Elevation: 805' -5"	Submergence	NA	
Flood Level Elevation: 744' -0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (°F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:	Submergence		
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH		EQ Sys No: 09	P&ID: M119/G8			
Loc Dwg: M330/D4	Elec Scheme: E122/2		VDR ID: E11-F022				
Mfr Model Ref: V.P. M133A-6							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins:	Environment:		EQ Sys No:	P&ID:			
Loc Dwg:	Elec Scheme:		VDR ID:				
Mfr Model Ref:							

L200-17
 Owner: IDWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATOR WITH MOTOR BRAKE Manufacturer: LIMITORQUE Model Number: SMB-2, AC-CLASS H NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF C,D	TYPE TEST	SEE NOTE (1)
	Temperature (°F)	SEE GENERAL NOTE 6		SEE NOTE (2)	001		REF B,C,D,E	TYPE TEST	SEE NOTE (1)
	Pressure (PSIG)	SEE GENERAL NOTE 6		105	001		REF B,C	TYPE TEST	SEE NOTE (1)
	Relative Humidity (%)	100		100	001		REF A,B,C,D,E	TYPE TEST	SEE NOTE (1)
	Chemical Spray	DEMIN WATER		SEE NOTE (3)	001		REF D	TYPE TEST	SEE NOTE (1)
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	4.3 E07		2.0 E08	001		REF C,D,F	TYPE TEST	SEE NOTE (1)
	Aging	40 YEARS		40 YEARS SEE NDTE (4)	001		REF. G	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT NO. B0003, PROJECT NO. 600461, QUALIFICATION TYPE TEST REPORT (CHRON 7155). LIMITORQUE VALVE ACTUATORS FOR CLASS 1E SERVICE OUTSIDE PRIMARY CONTAINMENT. TEST PERFORMED NOV. 13, 1974 TO JAN. 23, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT). B . REPORT NO. B0009, PROJECT NO. 600426, QUALIFICATION TYPE	1 . MOTOR OPERATORS ARE QUALIFIED IN ACCORDANCE WITH REFERENCES A THROUGH H; SEE ACTION ITEM 19 FOR MOTOR BRAKES. 2 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 250F IN REFERENCE A, TO 310F IN REFERENCE D, TO 340F IN REFERENCES B AND C, AND A SMALLER SIZE VALVE OPERATOR (SMB-00) SUCCESSFULLY PASSED A HIGH TEMPERATURE TEST OF 385F IN REFERENCE E.

L200-17

Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
Docket: 50-331

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DOCUMENTATION REFERENCES:	NOTES:
<p>TEST REPORT (CHRON 7156). LIMITORQUE DC VALVE ACTUATORS FOR NUCLEAR POWER STATIONS. TEST PERFORMED SEPT 2, 1975 TO NOV 3, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT).</p> <p>C . LIMITORQUE SHOP ORDER NO. 600376A (CHRON 7157), QUALIFICATION TEST OF LIMITORQUE VALVE OPERATORS IN A SIMULATED REACTOR CONTAINMENT POST-ACCIDENT STEAM ENVIRONMENT, SEPT, 1972 (TEST PROFILE IS FIGURE 3 OF THIS REPORT).</p> <p>D . PROJECT NO. 600456 (CHRON 7158). NUCLEAR POWER STATION. QUALIFICATION TYPE TEST REPORT, LIMITORQUE VALVE ACTUATORS FOR PWR SERVICE. TEST PERFORMED JUNE 7, 1974 TO NOV 22, 1974. TEST PROFILE IS FIGURE 6 OF THIS REPORT.</p> <p>E . REPORT NO. 80027, PROJ NO. 600508 (CHRON 7159), LIMITORQUE VALVE ACTUATOR TEMPERATURE RELATED TO HIGH SUPERHEAT AMBIENT TEMPERATURES, DATED 10/18/78 (TEST PROFILE IS FIGURE 2 OF THIS REPORT).</p> <p>F . REPORT NO. 80058 (CHRON 7160), LIMITORQUE VALVE ACTUATOR QUALIFICATION FOR NUCLEAR POWER STATION SERVICE, DATED 1/11/80.</p> <p>G . AGING EVALUATION FORM L200-OOH REV. 1, DATED 8/13/83 (CHRON 12986).</p>	<p>3 . REPRESENTATIVE VALVE OPERATORS WERE SUBJECTED TO SPRAY CHEMISTRY DESCRIBED IN IEEE STANDARD 382-1972, TABLE 1, WHICH IS MORE SEVERE THAN DEMINERALIZED WATER SPRAY.</p> <p>4 . QUALIFIED LIFE IS BASED ON OPERATION AT LEAST TWICE A YEAR AND LUBRICATION CHECKS AS FOLLOWS-</p> <p>A) MAIN GEAR CASE-CHECK LUBRICANT FOR PROPER LEVEL AND PRESENCE OF CONTAMINANTS AND LUBRICATE ZERK FITTING EVERY 18 MONTHS.</p> <p>B) GEARED LIMIT SWITCH-INSPECT LUBRICATION EVERY 36 MONTHS.</p>

L200-17

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLO

Unit: 1

Docket No: 50-331

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DATA SHEET

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Date: 09/22/83

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EQ Equip No: L200-17-003

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-1908 Component: MOTOR OPERATOR WITH MOTOR BRAKE Manufacturer: LIMITORQUE Model Number: SMB-2, AC-CLASS H Purchase Order Number: M-152A Function/Service: REACTOR CORE COOLING/ RHR PMP SUCTION FROM RECIRC SYSTEM ISOLATION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775' - 11"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
	Temperature (°F)	SEE GENERAL NOTE 6	353176A OPERATOR S/N
	Pressure (PSIG)	SEE GENERAL NOTE 6	137618 MOTOR S/N
	Relative Humidity (%)	100	Y250004A1 MOTOR MFR IS
	Chemical Spray	DEMIN WATER	RELIANCE BRAKE MFR
	Seismic	NA	DINGS BRAKE MODEL
	Radiation (Rad)	4.3 E07	R71010-7
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974		Environment: HARSH		EQ Sys No: 09		P&ID: M119/E8	
Loc Dwg: M331/D6		Elec Scheme:		E122/56		VDR ID: E11-FO09	
Mfr Model Ref:		V.P. M152A-7					

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: HIGH PRESSURE COOLANT INJECTION Plant I.D. Number: MO-2238 Component: MOTOR OPERATOR WITH MOTOR BRAKE Manufacturer: LIMITORQUE Model Number: SMB-2, AC-CLASS H Purchase Order Number: M-133A Function/Service: PRIMARY CONTAINMENT ISOLATION/HPCI TURBINE MAIN STEAM SUPPLY INBOARD ISOLATION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775' - 11"	Operating Time	1 HOUR	BILL OF MAT'L ORDER NUMBER
	Temperature (°F)	SEE GENERAL NOTE 6	353179C OPERATOR S/N
	Pressure (PSIG)	SEE GENERAL NOTE 6	138881 MOTOR S/N
	Relative Humidity (%)	100	Y250005A1 MOTOR MFR IS
	Chemical Spray	DEMIN WATER	RELIANCE BRAKE MFR
	Seismic	NA	DINGS BRAKE MODEL
	Radiation (Rad)	2.1 E07	R71015-7
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 06		P&ID: M122/G6	
Loc Dwg: E330/B5	Elec Scheme: E121/14			VDR ID: E41-FO02			
Mfr Model Ref:	V.P. M133A-5						

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQ Equip No: L200-17-005

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR RECIRCULATION Plant I.D. Number: MO-4627 Component: MOTOR OPERATOR WITH MOTOR BRAKE Manufacturer: LIMITORQUE Model Number: SMB-2,AC-CLASS H Purchase Order Number: APED Function/Service: REACTOR CORE COOLING/ 1P201A RECIRCULATION LOOP ISOLATION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 742'-9" Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Operating Time	1 HOUR	BILL OF MAT'L ORDER NUMBER
	Temperature (°F)	SEE GENERAL NOTE 6	329731G3 OPERATOR S/N
	Pressure (PSIG)	SEE GENERAL NOTE 6	121781 MOTOR S/N
	Relative Humidity (%)	100	GX79819 MOTOR MFR IS
	Chemical Spray	DEMIN WATER	RELIANCE BRAKE MFR
	Seismic	NA	DINGS BRAKE MODEL
	Radiation (Rad)	2.1 E07	2-63015-24
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR RECIRCULATION Plant I.D. Number: MO-4628 Component: MOTOR OPERATOR WITH MOTOR BRAKE Manufacturer: LIMITORQUE Model Number: SMB-2,AC-CLASS H Purchase Order Number: APED Function/Service: REACTOR CORE COOLING/ 1P-201B RECIRCULA- TION LOOP ISOLATION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 742'-9" Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Operating Time	1 HOUR	BILL OF MAT'L ORDER NUMBER
	Temperature (°F)	SEE GENERAL NOTE 6	329731G3 OPERATOR S/N
	Pressure (PSIG)	SEE GENERAL NOTE 6	121782 MOTOR S/N
	Relative Humidity (%)	100	GX79822 MOTOR MFR IS
	Chemical Spray	DEMIN WATER	RELIANCE BRAKE MFR
	Seismic	NA	DINGS BRAKE MODEL
	Radiation (Rad)	2.1 E07	2-63015-24
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 40 P&ID: M116/C2 Loc Dwg: E331/F4 Elec Scheme: E120/3 VDR ID: B31-F031A Mfr Model Ref: APED B31-2808-1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 40 P&ID: M116/CB Loc Dwg: E331/C5 Elec Scheme: E120/3 VDR ID: B31-F031B Mfr Model Ref: APED B31-2808-1							

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATOR WITH MOTDR BRAKE Manufacturer: LIMITORQUE Model Number: SMB-3, DC-CLASS B NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF A,B,C D,G	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Temperature (°F)	300		SEE NOTE (2)	001		REF A,B,C D,E,G	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Pressure (PSIG)	1.8		105	001		REF B,C,G	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Relative Humidity (%)	100		100	001		REF A,B,C D,E,G	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	9.4 E06		2.0 E07	001		REF A,F,G	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Aging	40 YEARS		40 YEARS SEE NOTE (3)	001		REF. H	ANALYSIS	SEE NOTE (1)
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT NO. B0003, PROJECT NO. 600461, QUALIFICATION TYPE TEST REPORT (CHRON 7155), LIMITORQUE VALVE ACTUATORS FOR CLASS 1E SERVICE OUTSIDE PRIMARY CONTAINMENT. TEST PERFORMED NOV. 13, 1974 TO JAN. 23, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT). B . REPORT NO. B0009, PROJECT NO. 600426, QUALIFICATION TYPE	1 . MOTOR OPERATOR IS QUALIFIED IN ACCORDANCE WITH REFERENCES A THROUGH H; SEE ACTION ITEM 19 FOR MOTOR BRAKES. 2 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 250F IN REFERENCE A, TO 310F IN REFERENCE D, TO 340F IN REFERENCES B AND C, AND A SMALLER SIZE VALVE OPERATOR (SMB-00) SUCCESSFULLY PASSED A HIGH TEMPERATURE TEST OF 385F IN REFERENCE E.

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Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
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EQUIPMENT QUALIFICATION REPORT

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DOCUMENTATION REFERENCES:	NOTES:
<p>TEST REPORT (CHRON 7156). LIMITORQUE DC VALVE ACTUATORS FOR NUCLEAR POWER STATIONS. TEST PERFORMED SEPT 2, 1975 TO NOV 3, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT).</p> <p>C . LIMITORQUE SHDP ORDER NO. 600376A (CHRON 7157), QUALIFICATION TEST OF LIMITORQUE VALVE OPERATORS IN A SIMULATED REACTOR CONTAINMENT POST-ACCIDENT STEAM ENVIRONMENT, SEPT, 1972 (TEST PROFILE IS FIGURE 3 OF THIS REPORT).</p> <p>D . PROJECT NO. 600456 (CHRON 7158). NUCLEAR POWER STATION, QUALIFICATION TYPE TEST REPORT, LIMITORQUE VALVE ACTUATORS FOR PWR SERVICE. TEST PERFORMED JUNE 7, 1974 TO NOV 22, 1974. TEST PROFILE IS FIGURE 6 OF THIS REPORT.</p> <p>E . REPORT NO. BOO27, PROJ NO. 600508 (CHRON 7159), LIMITORQUE VALVE ACTUATOR TEMPERATURE RELATED TO HIGH SUPERHEAT AMBIENT TEMPERATURES, DATED 10/18/78 (TEST PROFILE IS FIGURE 2 OF THIS REPORT).</p> <p>F . REPORT NO. BOO58 (CHRON 7160), LIMITORQUE VALVE ACTUATOR QUALIFICATION FOR NUCLEAR POWER STATION SERVICE, DATED 1/11/80.</p> <p>G . BECHTEL ENGINEERING ANALYSIS OF LIMITORQUE INSULATION CLASS B MOTOR OPERATORS DATED 3/26/82 (CHRON 6775).</p> <p>H . AGING EVALUATION FORM L200-OOB REV. 1, DATED 9/2/83 (CHRON 13248).</p>	<p>REFERENCE G ANALYZED A TEMPERATURE QUALIFICATION CAPABILITY OF AT LEAST 300F FOR INSULATION CLASS B MOTORS.</p> <p>3 . QUALIFIED LIFE IS BASED ON OPERATION AT LEAST TWICE A YEAR AND LUBRICATION CHECKS AS FOLLOWS.</p> <p>A) MAIN GEAR CASE-CHECK LUBRICANT FOR PROPER LEVEL AND PRESENCE OF CONTAMINANTS AND LUBRICATE ZERK FITTINGS EVERY 18 MONTHS.</p> <p>B) GEARED LIMIT SWITCH-INSPECT LUBRICATION EVERY 36 MONTHS.</p>

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: L200-18-001

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: HIGH PRESSURE COOLANT INJECTION	Operating Time	30 DAYS	RAD DOSE IS BASED ON A
Plant I.D. Number: MO-2239 Component: MOTOR OPERATOR WITH MOTOR BRAKE Manufacturer: LIMITORQUE	Temperature (*F)	300	1 HOUR OPERATING TIME FOR
Model Number: SMB-3, DC-CLASS B	Pressure (PSIG)	1.8	A LOCA
Purchase Order Number: M-152A	Relative Humidity (%)	100	BILL OF MAT'L
Function/Service: PRIMARY CONTAINMENT ISOLATION/HPCI TURBINE STEAM SUPPLY OUTBOARD ISOLATION	Chemical Spray	NA	ORDER NUMBER 353176F
Accuracy: Spec: NA	Seismic	NA	OPERATOR S/N 141627
Location: STEAM TUNNEL	Radiation (Rad)	9.4 E06	MOTOR S/N KY19365
Floor Elevation: 757'-6"	Aging	40 YEARS	MOTOR MFR IS PEERLESS
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Submergence	NA	BRAKE MFR STEARNS
			BRAKE MODEL 1-087-035

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (*F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:	Submergence		
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 06	P&ID: M122/G5				
Loc Dwg: E328/D4	Elec Scheme: E121/15	VDR ID: E41-F003					
Mfgr Model Ref: V.P. M152A-8							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins:	Environment:	EQ Sys No:	P&ID:				
Loc Dwg:	Elec Scheme:	VDR ID:					
Mfgr Model Ref:							

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Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit 1

Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATOR WITH MOTOR BRAKE Manufacturer: LIMITORQUE Model Number: SMB-2, DC-CLASS B NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A, B, C, D, G	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Temperature (°F)	277		SEE NOTE (2)	001		REF. A, B, C, D, E, G	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Pressure (PSIG)	1.2		105	001		REF. B, C, G	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Relative Humidity (%)	100		100	001		REF. A, B, C, D, E, G	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	5.6 E06		2.0 E07	001		REF. A, F, G	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Aging	40 YEARS		40 YEARS SEE NOTE (3)	001		REF. H	ANALYSIS	SEE NOTE (1)
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT NO. B0003, PROJECT NO. 600461, QUALIFICATION TYPE TEST REPORT (CHRON 7155), LIMITORQUE VALVE ACTUATORS FOR CLASS 1E SERVICE OUTSIDE PRIMARY CONTAINMENT. TEST PERFORMED NOV. 13, 1974 TO JAN. 23, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT). B . REPORT NO. B0009, PROJECT NO. 600426, QUALIFICATION TYPE	1 . MOTOR OPERATOR IS QUALIFIED IN ACCORDANCE WITH REFERENCES A THROUGH H; SEE ACTION ITEM 19 FOR MOTOR BRAKE. 2 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 250F IN REFERENCE A, TO 310F IN REFERENCE D, TO 340F IN REFERENCES B AND C, AND A SMALLER SIZE VALVE OPERATOR (SMB-00) SUCCESSFULLY PASSED A HIGH TEMPERATURE TEST OF 385F IN

L200-19

Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
Docket: 50-331

EQUIPMENT QUALIFICATION REPORT

Sheet No. 216

Revision: 2

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DOCUMENTATION REFERENCES:	NOTES:
<p>TEST REPORT (CHRON 7156). LIMITORQUE DC VALVE ACTUATORS FOR NUCLEAR POWER STATIONS. TEST PERFORMED SEPT 2, 1975 TO NOV 3, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT).</p> <p>C . LIMITORQUE SHOP ORDER NO. 600376A (CHRON 7157), QUALIFICATION TEST OF LIMITORQUE VALVE OPERATORS IN A SIMULATED REACTOR CONTAINMENT POST-ACCIDENT STEAM ENVIRONMENT, SEPT, 1972 (TEST PROFILE IS FIGURE 3 OF THIS REPORT).</p> <p>D . PROJECT NO. 600456 (CHRON 7158). NUCLEAR POWER STATION, QUALIFICATION TYPE TEST REPORT, LIMITORQUE VALVE ACTUATORS FOR PWR SERVICE. TEST PERFORMED JUNE 7, 1974 TO NOV 22, 1974. TEST PROFILE IS FIGURE 6 OF THIS REPORT.</p> <p>E . REPORT NO. 80027, PROJ NO. 600508 (CHRON 7159), LIMITORQUE VALVE ACTUATOR TEMPERATURE RELATED TO HIGH SUPERHEAT AMBIENT TEMPERATURES, DATED 10/18/78 (TEST PROFILE IS FIGURE 2 OF THIS REPORT).</p> <p>F . REPORT NO. 80058 (CHRON 7160), LIMITORQUE VALVE ACTUATOR QUALIFICATION FOR NUCLEAR POWER STATION SERVICE, DATED 1/11/80.</p> <p>G . BECHTEL ENGINEERING ANALYSIS OF LIMITORQUE INSULATION CLASS B MOTOR OPERATORS DATED 3/26/82 (CHRON 6775).</p> <p>H . AGING EVALUATION FORM L200-008 REV. 1, DATED 9/2/83 (CHRON 13248).</p>	<p>REFERENCE E. REFERENCE G ANALYZED A TEMPERATURE QUALIFICATION CAPABILITY OF AT LEAST 300F FOR INSULATION CLASS B MOTORS.</p> <p>3 . QUALIFIED LIFE IS BASED ON OPERATION AT LEAST TWICE A YEAR AND LUBRICATION CHECKS AS FOLLOWS.</p> <p>A) MAIN GEAR CASE-CHECK LUBRICANT FOR PROPER LEVEL AND PRESENCE OF CONTAMINANTS AND LUBRICATE ZERK FITTINGS EVERY 18 MONTHS.</p> <p>B) GEARED LIMIT SWITCH-INSPECT LUBRICATION EVERY 36 MONTHS.</p>

L200-19

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: L200-19-001

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-1909 Component: MOTOR OPERATOR WITH MOTOR BRAKE Manufacturer: LIMITORQUE	Temperature (*F)	277	353176B OPERATOR S/N
Model Number: SMB-2, DC-CLASS B	Pressure (PSIG)	1.2	138286 MOTOR S/N
Purchase Order Number: M-152A	Relative Humidity (%)	100	JY19364 MOTOR MFR IS
Function/Service: REACTOR CORE COOLING/ RHR PUMP SUCTION FROM RECIRC SYSTEM ISOLATION	Chemical Spray	NA	PEERLESS BRAKE MFR
Accuracy: Spec: NA	Seismic	NA	STEARNS BRAKE MODEL
Location: RHR VALVE ROOM	Radiation (Rad)	5.6 E06	1-087-035
Floor Elevation: 757' -6"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (*F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:	Submergence		
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	YES	NA

Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 09	P&ID: M119/E8
Loc Dwg: M248/D7	Elec Scheme: E122/4	VDR ID: E11-FOOB	
Mfr Model Ref: V.P. M152A-42			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM

Qual Life Begins:	Environment:	EQ Sys No:	P&ID:
Loc Dwg:	Elec Scheme:	VDR ID:	
Mfr Model Ref:			

L200-20

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SMB-2, AC-CLASS B NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A,C,D G,I	TYPE TEST/ ANALYSIS	NONE
	Temperature (*F)	277		SEE NOTE (2)	001		REF. A,G,I	TYPE TEST/ ANALYSIS	NONE
	Pressure (PSIG)	1.2		SEE NOTE (1)	001		REF. A,G,I	TYPE TEST/ ANALYSIS	NONE
	Relative Humidity (%)	100		100	001		REF. A,B,C D,E G,I	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.3 E07		2.0 E07 SEE NOTE (4)	001		REF. A,F,I	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (3)	001		REF. H,I	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT NO. B0003, PROJECT NO. 600461, QUALIFICATION TYPE TEST REPORT (CHRON 7155), LIMITORQUE VALVE ACTUATORS FOR CLASS 1E SERVICE OUTSIDE PRIMARY CONTAINMENT. TEST PERFORMED NOV. 13, 1974 TO JAN. 23, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT). B . REPORT NO. B0009, PROJECT NO. 600426, QUALIFICATION TYPE	1 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 25 PSIG IN REFERENCE A, AND QUALIFIED TO 105 PSIG BY ANALYSIS IN REFERENCE G. 2 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 250F IN REFERENCE A, AND QUALIFIED TO 300F BY ANALYSIS IN REFERENCE G.

L200-20

Owner: IOWA ELECTRIC
Facility: DUANE ARNDLD
Unit: 1
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EQUIPMENT QUALIFICATION REPORT

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DOCUMENTATION REFERENCES:	NOTES:
<p>TEST REPORT (CHRON 7156). LIMITORQUE DC VALVE ACTUATORS FOR NUCLEAR POWER STATIONS. TEST PERFORMED SEPT 2, 1975 TO NOV 3, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT).</p> <p>C . LIMITORQUE SHOP ORDER NO. 600376A (CHRON 7157), QUALIFICATION TEST OF LIMITORQUE VALVE OPERATORS IN A SIMULATED REACTOR CONTAINMENT POST-ACCIDENT STEAM ENVIRONMENT, SEPT, 1972 (TEST PROFILE IS FIGURE 3 OF THIS REPORT).</p> <p>D . PROJECT NO. 600456 (CHRON 7158). NUCLEAR POWER STATION, QUALIFICATION TYPE TEST REPORT, LIMITORQUE VALVE ACTUATORS FOR PWR SERVICE. TEST PERFORMED JUNE 7, 1974 TO NOV 22, 1974. TEST PROFILE IS FIGURE 6 OF THIS REPORT.</p> <p>E . REPORT NO. B0027, PROJ NO. 600508 (CHRON 7159), LIMITORQUE VALVE ACTUATOR TEMPERATURE RELATED TO HIGH SUPERHEAT AMBIENT TEMPERATURES, DATED 10/18/78 (TEST PROFILE IS FIGURE 2 OF THIS REPORT).</p> <p>F . REPORT NO. B0058 (CHRON 7160), LIMITORQUE VALVE ACTUATOR QUALIFICATION FOR NUCLEAR POWER STATION SERVICE, DATED 1/11/80.</p> <p>G . BECHTEL ENGINEERING ANALYSIS OF LIMITORQUE INSULATION CLASS B MOTOR OPERATORS DATED 3/26/82 (CHRON 6775).</p> <p>H . AGING EVALUATION FORM L200-OOB REV. 1, DATED 9/2/83 (CHRON 13248).</p> <p>I . SECTION VII.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 16.</p> <p>(REFERENCES SUMMARIZED IN SECTION IX.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 17.)</p>	<p>3 . QUALIFIED LIFE IS BASED ON OPERATION AT LEAST TWICE A YEAR AND LUBRICATION CHECKS AS FOLLOWS-</p> <p>A) MAIN GEAR CASE-CHECK LUBRICANT FOR PROPER LEVEL AND PRESENCE OF CONTAMINANTS AND LUBRICATE ZERK FITTING EVERY 18 MONTHS.</p> <p>B) GEARED LIMIT SWITCH-INSPECT LUBRICATION EVERY 36 MONTHS.</p> <p>4 . CLASS B AC MOTORS WERE SEPARATELY TESTED TO 2.0 EOB RADS IN ACCORDANCE WITH REFERENCE A.</p>

L200-20
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: L200-20-001

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EQ Equip No: L200-20-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-1934 Component: MOTOR OPERATOR	Temperature (°F)	277	357986A OPERATOR S/N
Manufacturer: LIMITORQUE	Pressure (PSIG)	1.2	147132 MOTOR MFR IS
Model Number: SMB-2, AC-CLASS B	Relative Humidity (%)	100	RELIANCE
Purchase Order Number: M-151A	Chemical Spray	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RHR TEST LINE ISOLATION LOOP B	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	1.3 E07	
Location: TORUS ROOM SOUTH	Aging	40 YEARS	
Floor Elevation: 716' - 9"	Submergence	NA	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-2007 Component: MOTOR OPERATOR	Temperature (°F)	277	357986A OPERATOR S/N
Manufacturer: LIMITORQUE	Pressure (PSIG)	1.2	147181 MOTOR S/N
Model Number: SMB-2, AC-CLASS B	Relative Humidity (%)	100	Y252546AZMW MOTOR MFR IS
Purchase Order Number: M-151A	Chemical Spray	NA	RELIANCE
Function/Service: PRIMARY CONTAINMENT ISOLATION/RHR TEST LINE ISOLATION LOOP A	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	1.3 E07	
Location: TORUS ROOM NORTH	Aging	40 YEARS	
Floor Elevation: 716' - 9"	Submergence	NA	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	YES	NA

Qual Life Begins: 1974
 Environment: HARSH
 EQ Sys No: 09
 P&ID: M119/F5
 Loc Dwg: M266/G7
 Elec Scheme: E121/59
 VDR ID: E11-FO24B
 Mfr Model Ref: V.P. M151A-7

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	YES	NA

Qual Life Begins: 1974
 Environment: HARSH
 EQ Sys No: 09
 P&ID: M120/F5
 Loc Dwg: M256/D3
 Elec Scheme: E121/59
 VDR ID: E11-FO24A
 Mfr Model Ref: V.P. M151A-7

L200-20

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: L200-20-005

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-1903 Component: MOTOR OPERATOR	Temperature (°F)	140	353177F OPERATOR S/N
Manufacturer: LIMITORQUE	Pressure (PSIG)	0	136573 MOTOR S/N
Model Number: SMB-2, AC-CLASS B	Relative Humidity (%)	100	Y249631A1FW MOTOR MFR IS
Purchase Order Number: M-151A	Chemical Spray	NA	RELIANCE
Function/Service: CONTAINMENT HEAT REMOVAL/CONTAINMENT SPRAY ISOLATION LOOP B	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	1.3 E07	
Location: TORUS ROOM SOUTH	Aging	40 YEARS	
Floor Elevation: 716' - 9"	Submergence	NA	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (°F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:			
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:	Submergence		

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NO	NA

Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 09	P&ID: M119/G6
Loc Dwg: M266/H8	Elec Scheme: E121/60	VDR ID: E11-FO16B	
Mfgr Model Ref: V.P. M151A-4			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM

Qual Life Begins:	Environment:	EQ Sys No:	P&ID:
Loc Dwg:	Elec Scheme:	VDR ID:	
Mfgr Model Ref:			

L200-21

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATOR WITH MOTOR BRAKE Manufacturer: LIMITORQUE Model Number: SMB-2, AC-CLASS B NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A, C D, G	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Temperature (°F)	214		SEE NOTE (2)	005		REF. A, G	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Pressure (PSIG)	1.1		SEE NOTE (3)	001		REF. A, G	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Relative Humidity (%)	100		100	001		REF. A, B, C D, E, G	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.3 E07		2.0 E07	003		REF. A, F H, I	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Aging	40 YEARS		40 YEARS SEE NOTE (4)	001		REF. H, I	TYPE TEST/ ANALYSIS	SEE NOTE (1)
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT NO. B0003, PROJECT NO. 600461, QUALIFICATION TYPE TEST REPORT (CHRON 7155), LIMITORQUE VALVE ACTUATORS FOR CLASS 1E SERVICE OUTSIDE PRIMARY CONTAINMENT. TEST PERFORMED NOV. 13, 1974 TO JAN. 23, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT). B . REPORT NO. B0009, PROJECT NO. 600426, QUALIFICATION TYPE	1 . MOTOR OPERATORS AND MOTOR BRAKES ARE QUALIFIED IN ACCORDANCE WITH REFERENCE A THROUGH I (WITH EXCEPTION OF MOTOR BRAKES FOR MO-1902 AND MO-2117); SEE ACTION ITEM 19. 2 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 250F IN REFERENCE A, AND QUALIFIED TO 300F BY ANALYSIS IN REFERENCE G.

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Owner: IDWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
Docket: 50-331

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DOCUMENTATION REFERENCES:	NOTES:
<p>TEST REPORT (CHRON 7156). LIMITORQUE DC VALVE ACTUATORS FOR NUCLEAR POWER STATIONS. TEST PERFORMED SEPT 2, 1975 TO NOV 3, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT).</p> <p>C . LIMITORQUE SHOP ORDER NO. 600376A (CHRON 7157), QUALIFICATION TEST OF LIMITORQUE VALVE OPERATORS IN A SIMULATED REACTOR CONTAINMENT POST-ACCIDENT STEAM ENVIRONMENT, SEPT, 1972 (TEST PROFILE IS FIGURE 3 OF THIS REPORT).</p> <p>D . PROJECT NO. 600456 (CHRON 7158). NUCLEAR POWER STATION, QUALIFICATION TYPE TEST REPORT, LIMITORQUE VALVE ACTUATORS FOR PWR SERVICE. TEST PERFORMED JUNE 7, 1974 TO NOV 22, 1974. TEST PROFILE IS FIGURE 6 OF THIS REPORT.</p> <p>E . REPORT NO. 80027, PROJ NO. 600508 (CHRON 7159), LIMITORQUE VALVE ACTUATOR TEMPERATURE RELATED TO HIGH SUPERHEAT AMBIENT TEMPERATURES, DATED 10/18/78 (TEST PROFILE IS FIGURE 2 OF THIS REPORT).</p> <p>F . REPORT NO. 80058 (CHRON 7160), LIMITORQUE VALVE ACTUATOR QUALIFICATION FOR NUCLEAR POWER STATION SERVICE, DATED 1/11/80.</p> <p>G . BECHTEL ENGINEERING ANALYSIS OF LIMITORQUE INSULATION CLASS B MOTOR OPERATORS DATED 3/26/82 (CHRON 6775).</p> <p>H . AGING EVALUATION FORM L200-MB1 REV. 0, DATED 8/10/83 (CHRON 12865).</p> <p>I . AGING EVALUATION FORM L200-OOB REV. 1, DATED 9/2/83 (CHRON 13248).</p> <p>(REFERENCES SUMMARIZED IN SECTION IX.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 17.)</p>	<p>3 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 25 PSIG IN REFERENCE A, AND QUALIFIED TO 105 PSIG BY ANALYSIS IN REFERENCE G.</p> <p>4 . QUALIFIED LIFE IS BASED ON OPERATION AT LEAST TWICE A YEAR AND LUBRICATION CHECKS AS FOLLOWS.</p> <p>A) MAIN GEAR CASE-CHECK LUBRICANT FOR PROPER LEVEL AND PRESENCE OF CONTAMINANTS AND LUBRICATE ZERK FITTINGS EVERY 18 MONTHS.</p> <p>B) GEARED LIMIT SWITCH-INSPECT LUBRICATION EVERY 36 MONTHS.</p>

L200-21
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: L200-21-001

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EQ Equip No: L200-21-003

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-1902 Component: MOTOR OPERATOR WITH MOTOR BRAKE Manufacturer: LIMITORQUE Model Number: SMB-2, AC-CLASS B Purchase Order Number: M-151A Function/Service: CONTAINMENT HEAT REMOVAL/CONTAINMENT SPRAY ISOLATION LOOP B Accuracy: Spec: NA Location: RHR VALVE ROOM Floor Elevation: 757' -6"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 353177B OPERATOR S/N 135702 MOTOR S/N Y249629A2FW MOTOR MFR IS RELIANCE BRAKE MFR DINGS BRAKE MODEL X6-71010-29
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.6 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL Plant I.D. Number: MO-2000 Component: MOTOR OPERATOR WITH MOTOR BRAKE Manufacturer: LIMITORQUE Model Number: SMB-2, AC-CLASS B Purchase Order Number: M-151A Function/Service: CONTAINMENT HEAT REMOVAL/CONTAINMENT SPRAY ISOLATION LOOP A Accuracy: Spec: NA Location: RB-S Floor Elevation: 786' -0"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 353177B OPERATOR S/N 135703 MOTOR S/N Y249629A1FW MOTOR MFR IS RELIANCE BRAKE MFR DINGS BRAKE MODEL X6-71010-29
	Temperature (°F)	90	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	7.5 E05	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M119/G7 Loc Dwg: M248/C6 Elec Scheme: E121/48 VDR ID: E11-FO21B Mfr Model Ref: V.P. M151A-1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M120/G2 Loc Dwg: M269/F6 Elec Scheme: E121/48 VDR ID: E11-FO21A Mfr Model Ref: V.P. M151A-1							

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: L200-21-005

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EQ Equip No: L200-21-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CORE SPRAY Plant I.D. Number: MO-2117 Component: MOTOR OPERATOR WITH MOTOR BRAKE Manufacturer: LIMITORQUE Model Number: SMB-2, AC-CLASS B Purchase Order Number: M-152A Function/Service: REACTOR CORE COOLING /REACTOR VESSEL CORE SPRAY INLET ISOLATION LOOP A Accuracy: Spec: NA Location: RWCU HEAT EXCH ROOM Floor Elevation: 786'-0"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
	Temperature (°F)	214	353176D OPERATOR S/N
	Pressure (PSIG)	1.1	135745 MOTOR S/N
	Relative Humidity (%)	100	Y249628A1 MOTOR MFR IS
	Chemical Spray	NA	RELIANCE BRAKE MFR
	Seismic	NA	DINGS BRAKE MODEL
	Radiation (Rad)	1.8 E06	X6-71015-29
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 786'-7" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CORE SPRAY Plant I.D. Number: MO-2137 Component: MOTOR OPERATOR WITH MOTOR BRAKE Manufacturer: LIMITORQUE Model Number: SMB-2, AC-CLASS B Purchase Order Number: M-152A Function/Service: REACTOR CORE COOLING /REACTOR VESSEL CORE SPRAY INLET ISOLATION LOOP B Accuracy: Spec: NA Location: RB-N Floor Elevation: 786'-0"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
	Temperature (°F)	90	353176D OPERATOR S/N
	Pressure (PSIG)	0	135746 MOTOR S/N
	Relative Humidity (%)	100	Y249628A2 MOTOR MFR IS
	Chemical Spray	NA	RELIANCE BRAKE MFR
	Seismic	NA	DINGS BRAKE MODEL
	Radiation (Rad)	7.5 E05	X6-71015-29
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH		EQ Sys No: 08		P&ID: M121/G6		
Loc Dwg: E321/E5	Elec Scheme: E121/5		VDR ID: E21-FO05A				
Mfgr Model Ref: V.P. M152A-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 08		P&ID: M121/E6	
Loc Dwg: E320/E5	Elec Scheme: E121/8			VDR ID: E21-FO05B			
Mfgr Model Ref:	V.P. M152A-5						

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNDLD
 Unit: 1
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EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATOR WITH MOTOR BRAKE Manufacturer: LIMITORQUE Model Number: SMB-O, AC-CLASS B NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF A,C D,G	TYPE TEST/ ANALYSIS	NONE
	Temperature (°F)	90		SEE NOTE (1)	001		REF A,G	TYPE TEST/ ANALYSIS	NONE
	Pressure (PSIG)	0		SEE NOTE (2)	001		REF A,G	TYPE TEST/ ANALYSIS	NONE
	Relative Humidity (%)	100		100	001		REF A,B,C D,E,G	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	7.5 E05		2.0 E07	001		REF. A,F H,I	TYPE TEST/ ANALYSIS	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (3)	001		REF. H,I	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT NO. B0003, PROJECT NO. 600461, QUALIFICATION TYPE TEST REPORT (CHRON 7155), LIMITORQUE VALVE ACTUATORS FOR CLASS 1E SERVICE OUTSIDE PRIMARY CONTAINMENT. TEST PERFORMED NOV. 13, 1974 TO JAN. 23, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT). B . REPORT NO. B0009, PROJECT NO. 600426, QUALIFICATION TYPE	1 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 250F IN REFERENCE A, AND QUALIFIED TO 300F BY ANALYSIS IN REFERENCE G. 2 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 25 PSIG IN REFERENCE A, AND QUALIFIED TO 105 PSIG BY ANALYSIS IN REFERENCE G.

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DOCUMENTATION REFERENCES:	NOTES:
<p>TEST REPORT (CHRON 7156). LIMITORQUE DC VALVE ACTUATORS FOR NUCLEAR POWER STATIONS. TEST PERFORMED SEPT 2, 1975 TO NOV 3, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT).</p> <p>C . LIMITORQUE SHOP ORDER NO. 600376A (CHRON 7157), QUALIFICATION TEST OF LIMITORQUE VALVE OPERATORS IN A SIMULATED REACTOR CONTAINMENT POST-ACCIDENT STEAM ENVIRONMENT, SEPT, 1972 (TEST PROFILE IS FIGURE 3 OF THIS REPORT).</p> <p>D . PROJECT NO. 600456 (CHRON 7158). NUCLEAR POWER STATION, QUALIFICATION TYPE TEST REPORT, LIMITORQUE VALVE ACTUATORS FOR PWR SERVICE. TEST PERFORMED JUNE 7, 1974 TO NOV 22, 1974. TEST PROFILE IS FIGURE 6 OF THIS REPORT.</p> <p>E . REPORT NO. 80027, PROJ NO. 600508 (CHRON 7159), LIMITORQUE VALVE ACTUATOR TEMPERATURE RELATED TO HIGH SUPERHEAT AMBIENT TEMPERATURES, DATED 10/18/78 (TEST PROFILE IS FIGURE 2 OF THIS REPORT).</p> <p>F . REPORT NO. 80058 (CHRON 7160), LIMITORQUE VALVE ACTUATOR QUALIFICATION FOR NUCLEAR POWER STATION SERVICE, DATED 1/11/80.</p> <p>G . BECHTEL ENGINEERING ANALYSIS OF LIMITORQUE INSULATION CLASS B MOTOR OPERATORS DATED 3/26/82 (CHRON 6775).</p> <p>H . AGING EVALUATION FORM L200-MB1 REV. 0, DATED 8/10/83 (CHRON 12865).</p> <p>I . AGING EVALUATION FORM L200-OOB REV.1, DATED 9/2/83 (CHRON 13248).</p>	<p>3 . QUALIFIED LIFE IS BASED ON OPERATION AT LEAST TWICE A YEAR AND LUBRICATION CHECKS AS FOLLOWS.</p> <p>A) MAIN GEAR CASE-CHECK LUBRICANT FOR PROPER LEVEL AND PRESENCE OF CONTAMINANTS AND LUBRICATE ZERK FITTINGS EVERY 18 MONTHS.</p> <p>B) GEARED LIMIT SWITCH-INSPECT LUBRICATION EVERY 36 MONTHS.</p>

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EQ Equip No: L200-22-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CORE SPRAY Plant I.D. Number: MO-2135 Component: MOTOR OPERATOR WITH MOTOR BRAKE Manufacturer: LIMITORQUE Model Number: SMB-O, AC-CLASS B Purchase Order Number: M-133A Function/Service: REACTOR CORE COOLING /CORE SPRAY PUMP 1P-211B DISCHARGE ISOLATION Accuracy: Spec: NA Location: RB-N Floor Elevation: 786'-0"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
	Temperature (°F)	90	353179K OPERATOR S/N
	Pressure (PSIG)	0	141418 MOTOR S/N
	Relative Humidity (%)	100	Y249590A1 MOTOR MFR IS
	Chemical Spray	NA	RELIANCE BRAKE MFR
	Seismic	NA	DINGS BRAKE MODEL
	Radiation (Rad)	7.5 E05	X6-71015-29
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CORE SPRAY Plant I.D. Number: MO-2115 Component: MOTOR OPERATOR WITH MOTOR BRAKE Manufacturer: LIMITORQUE Model Number: SMB-O, AC-CLASS B Purchase Order Number: M-133A Function/Service: REACTOR CORE COOLING /CORE SPRAY PUMP 1P-211A DISCHARGE ISOLATION Accuracy: Spec: NA Location: RB-S Floor Elevation: 786'-0"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
	Temperature (°F)	90	353179K OPERATOR S/N
	Pressure (PSIG)	0	141417 MOTOR S/N
	Relative Humidity (%)	100	Y249590A2-LW MOTOR MFR IS
	Chemical Spray	NA	RELIANCE BRAKE MFR
	Seismic	NA	DINGS BRAKE MODEL
	Radiation (Rad)	7.5 E05	X6-71015-29
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH		EQ Sys No: 08		P&ID: M121/E5		
Loc Dwg: E320/F5	Elec Scheme: E121/8		VDR ID: E21-FOO4B				
Mfr Model Ref: V.P. M133A-40							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH		EQ Sys No: 08		P&ID: M121/G5		
Loc Dwg: E321/D5	Elec Scheme:		E121/8		VDR ID: E21-FOO4A		
Mfr Model Ref:	V.P. M133A-40						

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SB-000, AC-CLASS H NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. C,D,H	TYPE TEST	NONE
	Temperature (°F)	130		SEE NOTE (1)	001		REF. B,C,D E,H	TYPE TEST	NONE
	Pressure (PSIG)	0		105	001		REF. B,C,H	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A,B,C D,E,H	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	2.1 E07		2.0 E08	001		REF. C,D F,H	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (2)	001		REF. G,H	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT NO. B0003, PROJECT NO. 600461, QUALIFICATION TYPE TEST REPORT (CHRON 7155), LIMITORQUE VALVE ACTUATORS FOR CLASS 1E SERVICE OUTSIDE PRIMARY CONTAINMENT. TEST PERFORMED NOV. 13, 1974 TO JAN. 23, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT). B . REPORT NO. B0009, PROJECT NO. 600426, QUALIFICATION TYPE	1 . REPRESENTATIVE VALVE OPERATORS WERE TESTED TO 310F IN REFERENCE D, TO 340F IN REFERENCES B AND C, AND A SIMILAR SIZE VALVE OPERATOR (SMB-00) SUCCESSFULLY PASSED A HIGH TEMPERATURE TEST OF 385F IN REFERENCE E. 2 . QUALIFIED LIFE IS BASED ON OPERATION AT LEAST TWICE A YEAR AND LUBRICATION CHECKS AS FOLLOWS-

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DOCUMENTATION REFERENCES:	NOTES:
<p>TEST REPORT (CHRON 7156). LIMITORQUE DC VALVE ACTUATORS FOR NUCLEAR POWER STATIONS. TEST PERFORMED SEPT 2, 1975 TO NOV 3, 1975 (TEST PROFILE IS FIGURE 1 OF THIS REPORT).</p> <p>C . LIMITORQUE SHOP ORDER NO. 600376A (CHRON 7157), QUALIFICATION TEST OF LIMITORQUE VALVE OPERATORS IN A SIMULATED REACTOR CONTAINMENT POST-ACCIDENT STEAM ENVIRONMENT, SEPT, 1972 (TEST PROFILE IS FIGURE 3 OF THIS REPORT).</p> <p>D . PROJECT NO. 600456 (CHRON 7158). NUCLEAR POWER STATION, QUALIFICATION TYPE TEST REPORT, LIMITORQUE VALVE ACTUATORS FOR PWR SERVICE. TEST PERFORMED JUNE 7, 1974 TO NOV 22, 1974. TEST PROFILE IS FIGURE 6 OF THIS REPORT.</p> <p>E . REPORT NO. 80027, PROJ NO. 600508 (CHRON 7159), LIMITORQUE VALVE ACTUATOR TEMPERATURE RELATED TO HIGH SUPERHEAT AMBIENT TEMPERATURES, DATED 10/18/78 (TEST PROFILE IS FIGURE 2 OF THIS REPORT).</p> <p>F . REPORT NO. 80058 (CHRON 7160), LIMITORQUE VALVE ACTUATOR QUALIFICATION FOR NUCLEAR POWER STATION SERVICE, DATED 1/11/80.</p> <p>G . AGING EVALUATION FORM L200-OOH REV. 1, DATED 8/13/83 (CHRON 12986).</p> <p>H . SECTION VII.A OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 1.</p>	<p>A) MAIN GEAR CASE-CHECK LUBRICANT FOR PROPER LEVEL AND PRESENCE OF CONTAMINANTS AND LUBRICATE ZERK FITTING EVERY 18 MONTHS.</p> <p>B) GEARED LIMIT SWITCH-INSPECT LUBRICATION EVERY 36 MONTHS.</p>

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EQ Equip No: L200-23-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: MO-8401A Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SB-000, AC-CLASS H Purchase Order Number: APED Function/Service: MITIGATE RADIOACTIVE RELEASE/MAIN STEAM LINE "A" LEAKAGE INBOARD BLEED VALVE Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757' -6"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 374324A OPERATOR S/N 188048 MOTOR MFR IS RELIANCE
	Temperature (°F)	130	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 760' -0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: MO-8401B Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SB-000, AC-CLASS H Purchase Order Number: APED Function/Service: MITIGATE RADIOACTIVE RELEASE/MAIN STEAM LINE "B" LEAKAGE INBOARD BLEED VALVE Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757' -6"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 374324A OPERATOR S/N 188047 MOTOR MFR IS RELIANCE
	Temperature (°F)	130	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 760' -0" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 05 P&ID: M184/F3 Loc Dwg: E328/B6 Elec Scheme: E122/38 VDR ID: B21-F920A Mfr Model Ref: APED B21-3238							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 05 P&ID: M184/C8 Loc Dwg: E328/B6 Elec Scheme: E122/38 VDR ID: B21-F920B Mfr Model Ref: APED B21-3238							

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EQ Equip No: L200-23-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT.	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 374324A OPERATOR S/N 188052 MOTOR MFR IS RELIANCE
Plant I.D. Number: MO-8401C Component:	Temperature (°F)	130	
MOTOR OPERATOR	Pressure (PSIG)	0	
Manufacturer:	Relative Humidity (%)	100	
LIMITORQUE	Chemical Spray	NA	
Model Number:	Seismic	NA	
SB-000, AC-CLASS H	Radiation (Rad)	2.1 E07	
Purchase Order Number:	Aging	40 YEARS	
APED	Submergence	NA	
Function/Service: MITIGATE RADIOACTIVE RELEASE/MAIN STEAM LINE "C" LEAKAGE INBOARD BLEED VALVE			
Accuracy: Spec: NA Location: STEAM TUNNEL			
Floor Elevation: 757' -6"			
Flood Level Elevation: 760' -0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: MO-8401D Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SB-000, AC-CLASS H Purchase Order Number: APED Function/Service: MITIGATE RADIOACTIVE RELEASE/MAIN STEAM LINE "D" LEAKAGE INBOARD BLEED VALVE Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757'-6" Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 374324A OPERATOR S/N 188046 MOTOR MFR IS RELIANCE
	Temperature (°F)	130	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 05 P&ID: M184/C3 Loc Dwg: E328/B6 Elec Scheme: E122/38 VDR ID: B21-F920C Mfr Model Ref: APED B21-3238							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 05 P&ID: M184/F8 Loc Dwg: E328/B6 Elec Scheme: E122/38 VDR ID: B21-F920D Mfr Model Ref: APED B21-3238							

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EQ Equip No: L200-23-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: MO-8402A Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SB-000, AC-CLASS H Purchase Order Number: APED Function/Service: MITIGATE RADIOACTIVE RELEASE/MAIN STEAM LINE "A" LEAKAGE OUTBOARD BLEED VALVE Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757'-6"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 374324A OPERATOR S/N 188051 MOTOR MFR IS RELIANCE
	Temperature (°F)	130	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
	Submergence	NA	
	Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:		

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: MO-8402B Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SB-000, AC-CLASS H Purchase Order Number: APED Function/Service: MITIGATE RADIOACTIVE RELEASE/MAIN STEAM LINE "B" LEAKAGE OUTBOARD BLEED VALVE Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757'-6"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 374324A OPERATOR S/N 188053 MOTOR MFR IS RELIANCE
	Temperature (°F)	130	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
	Submergence	NA	
	Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:		

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 05 P&ID: M184/F3 Loc Dwg: E328/B6 Elec Scheme: E122/38 VDR ID: B21-F921A Mfr Model Ref: APED B21-3238							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 05 P&ID: M184/C8 Loc Dwg: E328/A6 Elec Scheme: E122/38 VDR ID: B21-F921B Mfr Model Ref: APED B21-3238							

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EQ Equip No: L200-23-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: MO-8402C Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SB-000, AC-CLASS H Purchase Order Number: APED Function/Service: MITIGATE RADIOACTIVE RELEASE/MAIN STEAM LINE "C" LEAKAGE OUTBOARD BLEED VALVE Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757'-6" Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 374324A OPERATOR S/N 188049 MOTOR MFR IS RELIANCE
	Temperature (°F)	130	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: MO-8402D Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SB-000, AC-CLASS H Purchase Order Number: APED Function/Service: MITIGATE RADIOACTIVE RELEASE/MAIN STEAM LINE "D" LEAKAGE OUTBOARD BLEED VALVE Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757'-6" Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 374324A OPERATOR S/N 188050 MOTOR MFR IS RELIANCE
	Temperature (°F)	130	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 05 P&ID: M184/C3 Loc Dwg: E328/C6 Elec Scheme: E122/38 VDR ID: B21-F921C Mfr Model Ref: APED B21-3238							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 05 P&ID: M184/F8 Loc Dwg: E328/B6 Elec Scheme: E122/38 VDR ID: B21-F921D Mfr Model Ref: APED B21-3238							

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EQ Equip No: L200-23-010

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT.	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-8403A Component: MOTOR OPERATOR	Temperature (*F)	130	374324A OPERATOR S/N
Manufacturer: LIMITORQUE	Pressure (PSIG)	0	188056 MOTOR MFR IS
Model Number: SB-000, AC-CLASS H	Relative Humidity (%)	100	RELIANCE
Purchase Order Number: APED	Chemical Spray	NA	
Function/Service: MITIGATE RADIOACTIVE RELEASE/MAIN STEAM LINE "A" LEAKAGE TEST LINE BYPASS VALVE	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	2.1 E07	
Location: STEAM TUNNEL	Aging	40 YEARS	
Floor Elevation: 757'-6"	Submergence	NA	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT.	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER
Plant I.D. Number: MO-8403B Component: MOTOR OPERATOR	Temperature (*F)	130	374324A OPERATOR S/N
Manufacturer: LIMITORQUE	Pressure (PSIG)	0	188057 MOTOR MFR IS
Model Number: SB-000, AC-CLASS H	Relative Humidity (%)	100	RELIANCE
Purchase Order Number: APED	Chemical Spray	NA	
Function/Service: MITIGATE RADIOACTIVE RELEASE/MAIN STEAM LINE "B" LEAKAGE TEST LINE BYPASS VALVE	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	2.1 E07	
Location: STEAM TUNNEL	Aging	40 YEARS	
Floor Elevation: 757'-6"	Submergence	NA	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NO	NA

Qual Life Begins: 1974
 Environment: HARSH
 EQ Sys No: 05
 P&ID: M184/F4
 Loc Dwg: E328/B5
 Elec Scheme: E122/38
 VDR ID: B21-F922A
 Mfr Model Ref: APED B21-3238

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NO	NA

Qual Life Begins: 1974
 Environment: HARSH
 EQ Sys No: 05
 P&ID: M184/C8
 Loc Dwg: E328/B4
 Elec Scheme: E122/38
 VDR ID: B21-F922B
 Mfr Model Ref: APED B21-3238

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 Date: 09/22/83

11186-234-NP-1

EQ Equip No: L200-23-012

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: MO-8403C Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SB-000, AC-CLASS H Purchase Order Number: APED Function/Service: MITIGATE RADIOACTIVE RELEASE/MAIN STEAM LINE "C" LEAKAGE TEST LINE BYPASS VALVE Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757' -6"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 374324A OPERATOR S/N 188055 MOTOR MFR IS RELIANCE
	Temperature (°F)	130	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 760' -0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: MO-8403D Component: MOTOR OPERATOR Manufacturer: LIMITORQUE Model Number: SB-000, AC-CLASS H Purchase Order Number: APED Function/Service: MITIGATE RADIOACTIVE RELEASE/MAIN STEAM LINE "D" LEAKAGE TEST LINE BYPASS VALVE Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757' -6"	Operating Time	30 DAYS	BILL OF MAT'L ORDER NUMBER 374324A OPERATOR S/N 188054 MOTOR MFR IS RELIANCE
	Temperature (°F)	130	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 760' -0" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Loc Dwg: E328/B5 Mfr Model Ref: APED B21-3238 Environment: HARSH EQ Sys No: 05 Elec Scheme: E122/38 P&ID: M184/C3 VDR ID: B21-F922C							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Loc Dwg: E328/B5 Mfr Model Ref: APED B21-3238 Environment: HARSH EQ Sys No: 05 Elec Scheme: E122/38 P&ID: M184/F8 VDR ID: B21-F922D							

L280-01

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT
EVALUATION SHEET

Sheet No: 237

Revision: 2

Date: 09/22/83

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: FAN MOTOR Manufacturer: LOUIS-ALLIS COMPANY Model Number: COG4B TYPE 19236S-3E371 NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GEN NOTE 4	002		---	---	NONE
	Temperature (°F)	104		SEE GEN NOTE 7	002		---	---	NONE
	Pressure (PSIG)	0		SEE GEN NOTE 7	002		---	---	NONE
	Relative Humidity (%)	100		SEE GEN NOTE 7	002		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	2.7 E06		1.0 E07	002		REF. A	---	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	002		REF. A	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . AGING EVALUATION FORM L280-01 REV 1, DATED 8/11/83 (CHRON 12963). (REFERENCE SUMMARIZED IN SECTION VIII.E OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 90.)	1 . QUALIFIED LIFE OF 40 YEARS REQUIRES SURVEILLANCE TO CHECK BEARING LUBRICATION, MOTOR MOUNTS AND SHAFT ALIGNMENT AT 12 MONTH INTERVALS.

L280-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: L280-01-002

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 238
 Revision: 2
 Date: 09/22/83

11186-234-NP-1

EQ Equip No: L280-01-003

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT	Operating Time	30 DAYS	RAD DOSE BASED ON A
Plant I.D. Number: 1V-EF-15A Component:	Temperature (°F)	104	DISTANCE OF 18.6 FEET FRO
FAN MOTOR	Pressure (PSIG)	0	SGTS FILTER (CALC 221-004
Manufacturer: LOUIS-ALLIS COMPANY	Relative Humidity (%)	100	REV 2)
Model Number: COG4B TYPE 19236S-3E371 Purchase Order Number:	Chemical Spray	NA	
M-81	Seismic	NA	
Function/Service: MITIGATE RADIOACTIVE RELEASE/STANDBY GAS TREATMENT SYSTEM EXHAUST FAN	Radiation (Rad)	2.7 E06	
Accuracy: Spec: NA Location: SGT ROOM	Aging	40 YEARS	
Floor Elevation: 786' -0"	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT	Operating Time	30 DAYS	RAD DOSE BASED ON A
Plant I.D. Number: 1V-EF-15B Component:	Temperature (°F)	104	DISTANCE OF 18.6 FEET FRO
FAN MOTOR	Pressure (PSIG)	0	SGTS FILTER (CALC 221-004
Manufacturer: LOUIS-ALLIS COMPANY	Relative Humidity (%)	100	REV 2)
Model Number: COG4B TYPE 19236S-3E371 Purchase Order Number:	Chemical Spray	NA	
M-81	Seismic	NA	
Function/Service: MITIGATE RADIOACTIVE RELEASE/STANDBY GAS TREATMENT SYSTEM EXHAUST FAN	Radiation (Rad)	2.7 E06	
Accuracy: Spec: NA Location: SGT ROOM	Aging	40 YEARS	
Floor Elevation: 786' -0"	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
YES	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 10	P&ID: M158/G2				
Loc Dwg: E315/G3	Elec Scheme: E113/11	VDR ID: NONE					
Mfgr Model Ref: WALKDOWN 8/81, SHEET 34							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
YES	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 10	P&ID: M158/C2				
Loc Dwg: E315/F3	Elec Scheme: E113/16	VDR ID: NONE					
Mfgr Model Ref: WALKDDWN 8/81, SHEET 35							

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Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT
EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: DTF2-2RN-RH NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GEN NDTE 4	001		---	---	NONE
	Temperature (°F)	140		SEE GEN NOTE 7	001		---	---	NONE
	Pressure (PSIG)	0		SEE GEN NOTE 7	001		---	---	NONE
	Relative Humidity (%)	100		SEE GEN NOTE 7	001		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	SEE NOTE (1)		4.6 E06 SEE NDTE (2)	001		REF. (A)	ANALYSIS	SEE NOTE 2
	Aging	40 YEARS		SEE NOTE (3)	001		REF. (A)	ANALYSIS	SEE NOTE 3
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A. AGING EVALUATION FORM M302-02 REV. 0, DATED 6/2/83 (CHRON 12757).	1. 1.3 E07 RADDS FOR ZS-5704A,B AND ZS-5718A,B; 1.5 E06 RADDS FOR ZS-4311, ZS-4312, ZS-4313; 2.7 E06 RADDS ENVELOPES REMAINING POSITION SWITCHES. 2. RADIATION QUALIFICATION IS INADEQUATE FOR ZS-5704A,B AND 5718A,B; SEE ACTION ITEM 32. 3. 30 YEAR QUALIFIED LIFE APPLIES TO POSITION SWITCHES OTHER

M302-02

Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
Docket: 50-331

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DOCUMENTATION REFERENCES:	NOTES:
	THAN ZS-5704A,B AND 5718A,B.

M302-02
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: M302-02-001

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 241
 Revision: 2
 Date: 09/22/83

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EQ Equip No: M302-02-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-3704 Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: DTF2-2RN-RH Purchase Order Number: M- 137B Function/Service: POST ACCIDENT MONITORING/RADWASTE SYS ISOLATION DRYWELL FLOOR DRAIN SUMP DISCHRG VLV POSITION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716' - 9"	Operating Time	1 HOUR	DATE CODES; UPPER: 7203 LOWER: 7318
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.7 E06	
	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-3705 Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: DTF2-2RN-RH Purchase Order Number: M- 137B Function/Service: POST ACCIDENT MONITORING/RADWASTE SYS ISOLATION DRYWELL FLOOR DRAIN SUMP DISCHRG VLV POSITION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716' - 9"	Operating Time	1 HOUR	DATE CODES; UPPER: 7331 LOWER: 7203
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.7 E06	
	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M137/H7 Loc Dwg: E317/F4 Elec Scheme: E122/9 VDR ID: NONE Mfr Model Ref: V.P. M137B-24-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M137/H7 Loc Dwg: E317/F4 Elec Scheme: E122/9 VDR ID: NONE Mfr Model Ref: V.P. M137B-22-5							

M302-02
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: M302-02-003

EQUIPMENT QUALIFICATION REPORT DATA SHEET

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EQ Equip No: M302-02-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-3728 Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: DTF2-2RN-RH Purchase Order Number: M-137B Function/Service: POST ACCIDENT MONITORING/RADWASTE SYS ISOLATION DRYWELL FLOOR DRAIN SUMP DISCHARGE VLV POSITION Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716'-9"	Operating Time	1 HOUR	DATE CODES; UPPER: 7203 LOWER: 7203
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.7 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-3729 Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: DTF2-2RN-RH Purchase Order Number: M-137B Function/Service: POST ACCIDENT MONITORING/RADWASTE SYS ISOLATION DRYWELL FLOOR DRAIN SUMP DISCHARGE VLV POSITION Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716'-9"	Operating Time	1 HOUR	DATE CODES; UPPER: 7203 LOWER: 7203
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.7 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M137/D7 Loc Dwg: E316/D6 Elec Scheme: E122/9 VDR ID: NONE Mfr Model Ref: V.P. M137B-24-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M137/D7 Loc Dwg: E316/D6 Elec Scheme: E122/9 VDR ID: NONE Mfr Model Ref: V.P. M137B-22-5							

M302-02
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNDLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: M302-02-005

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EQ Equip No: M302-02-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-4311 Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: DTF2-2RN-RH Purchase Order Number: M-137B Function/Service: PDST ACCIDENT MONITORING/MAKEUP NITROGEN GAS INLET ISOLATION VALVE POSITION Accuracy: Spec: NA Location: RHR VALVE ROOM Floor Elevation: 757' -6" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	1 HOUR	DATE CODES; UPPER: 7613 LOWER: 7334
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.5 E06	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-4312 Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: DTF2-2RN-RH Purchase Order Number: M-137B Function/Service: POST ACCIDENT MONITORING/CONTAINMENT NITROGEN GAS PURGE SUPPLY VALVE POSITION Accuracy: Spec: NA Location: RHR VALVE ROOM Floor Elevation: 757' -6" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	1 HOUR	DATE CODES; UPPER: 7224 LOWER: 7120
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.5 E06	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Loc Dwg: E319/G7 Mfgr Model Ref: V.P. M137B-41-3 Environment: HARSH Elec Scheme: E122/13 EQ Sys No: 36 P&ID: M143/F3 VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Loc Dwg: E318/D7 Mfgr Model Ref: V.P. M137B-41-3 Environment: HARSH Elec Scheme: E122/12 EQ Sys No: 36 P&ID: M143/F3 VDR ID: NONE							

M302-02
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: M302-02-007

EQUIPMENT QUALIFICATION REPORT DATA SHEET

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EQ Equip No: M302-02-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-4313 Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: DTF2-2RN-RH Purchase Order Number: M-137B Function/Service: POST ACCIDENT MONITORING/SUPPRESSION POOL NITROGEN GAS PURGE SUPPLY VALVE POSITION Accuracy: Spec: NA Location: RHR VALVE ROOM Floor Elevation: 757'-6"	Operating Time	1 HOUR	DATE CODES: UPPER: 7224 LOWER: 7224
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.5 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-5703A Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: DTF2-2RN-RH Purchase Order Number: M-137B Function/Service: POST ACCIDENT MONITORING/REACTOR BUILDING-DRYWELL LOOP A BACKWASH INLET VALVE POSITION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9"	Operating Time	1 HOUR	DATE CODES: UPPER: 7210 LOWER: 7210
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.7 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M143/F3 Loc Dwg: E319/G7 Elec Scheme: E122/12 VDR ID: NONE Mfr Model Ref: V.P. M137B-41-3							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M157/H7 Loc Dwg: E317/E5 Elec Scheme: E113/94 VDR ID: NONE Mfr Model Ref: V.P. M137B-24-5							

M302-O2
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: M302-O2-009

EQUIPMENT QUALIFICATION REPORT DATA SHEET

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EQ Equip No: M302-O2-010

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-5703B Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: DTF2-2RN-RH Purchase Order Number: M-137B Function/Service: POST ACCIDENT MONITORING/REACTOR BUILDING-DRYWELL LOOP B BACKWASH INLET VALVE POSITION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	1 HOUR	DATE CODES; UPPER: 7210 LOWER: 7210
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.7 EO6	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-5704A Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: DTF2-2RN-RH Purchase Order Number: M-137A Function/Service: POST ACCIDENT MONITORING/REACTOR BUILDING-DRYWELL LOOP A CLEANING WATER DISCHRG VLV POSITION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	DATE CODES; UPPER: 7224 LOWER: 7224
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 EO7	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: Environment: EQ Sys No: P&ID: 1974 HARSH 36 M157/G7 Loc Dwg: E317/H7 Elec Scheme: E113/94 VDR ID: NONE Mfr Model Ref: V.P. M137B-24-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: Environment: EQ Sys No: P&ID: 1974 HARSH 36 M157/G6 Loc Dwg: E317/E5 Elec Scheme: E113/94 VDR ID: NONE Mfr Model Ref: V.P. M137A-62-2							

M302-02
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: M302-02-011

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EQ Equip No: M302-02-012

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-5704B Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: DTF2-2RN-RH Purchase Order Number: M-137A Function/Service: POST ACCIDENT MONITORING/REACTOR BUILDING-DRYWELL LOOP A CLEANING WATER DISCHRG VLV POSITION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716' - 9"	Operating Time	30 DAYS	DATE CODES; UPPER: 7224 LOWER: 7224
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-5718A Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: DTF2-2RN-RH Purchase Order Number: M-137A Function/Service: POST ACCIDENT MONITDRING/REACTOR BUILDING-DRYWELL LOOP A CLEANING WATER INTAKE VALVE POSITION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716' - 9"	Operating Time	30 DAYS	DATE CODES; UPPER: 7314 LOWER: 7224
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M157/G6 Loc Dwg: E317/G7 Elec Scheme: E113/94 VOR ID: NONE Mfr Model Ref: V.P. M137A-62-2							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M157/C8 Loc Dwg: E317/E5 Elec Scheme: E113/94 VDR ID: NONE Mfr Model Ref: V.P. M137A-62-2							

M302-02

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: M302-02-013

EQUIPMENT QUALIFICATION REPORT DATA SHEET

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EQ Equip No: M302-02-014

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-5718B Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: DTF2-2RN-RH Purchase Order Number: M-137A Function/Service: POST ACCIDENT MONITORING/REACTOR BUILDING-DRYWELL LOOP B CLEANING WATER INTAKE VALVE POSITION Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716' - 9"	Operating Time	30 DAYS	DATE CODES; UPPER: 7224 LOWER: 7224
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-5719A Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: DTF2-2RN-RH Purchase Order Number: M-137B Function/Service: POST ACCIDENT MONITORING/REACTOR BUILDING-DRYWELL LOOP A BACKWASH OUTLET VALVE POSITION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716' - 9"	Operating Time	1 HOUR	DATE CODES; UPPER: 7210 LOWER: 7203
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.7 E06	
	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M157/A8 Loc Dwg: E316/C7 Elec Scheme: E113/94 VDR ID: NONE Mfr Model Ref: V.P. M137A-62-2							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M157/B7 Loc Dwg: E317/E5 Elec Scheme: E113/94 VDR ID: NONE Mfr Model Ref: V.P. M137B-24-5							

M302-02
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: M302-02-015

EQUIPMENT QUALIFICATION REPORT DATA SHEET

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION	Operating Time	1 HOUR	DATE CODES; UPPER: 7210
Plant I.D. Number: ZS-5719B Component:	Temperature (*F)	140	LOWER: 7210
POSITION SWITCH	Pressure (PSIG)	0	
Manufacturer:	Relative Humidity (%)	100	
Model Number: DTF2-2RN-RH	Chemical Spray	NA	
Purchase Order Number: M-137B	Seismic	NA	
Function/Service: POST ACCIDENT MONITORING/DRYWELL LOOP B BACKWASH OUTLET VALVE POSITION	Radiation (Rad)	2.7 E06	
Accuracy: Spec: NA Location: TORUS ROOM NORTH	Aging	40 YEARS	
Floor Elevation: 716' - 9"	Submergence	NA	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (*F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:	Submergence		
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M157/A7 Loc Dwg: E316/C7 Elec Scheme: E113/94 VDR ID: NONE Mfgr Model Ref: V.P. M137B-24-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins: Environment: EQ Sys No: P&ID: Loc Dwg: Elec Scheme: VDR ID: Mfgr Model Ref:							

M302-03

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: OPD-AR NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GENERAL NOTE 4	002		---	---	NONE
	Temperature (°F)	140		SEE GENERAL NOTE 7	002		REF. (A)	---	NONE
	Pressure (PSIG)	0		SEE GENERAL NOTE 7	002		---	---	NONE
	Relative Humidity (%)	100		SEE GENERAL NOTE 7	002		REF. (A)	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	SEE NOTE (1)		3.0 E06 SEE NOTE (2)	005		REF. (A)	ANALYSIS	SEE NOTE (2)
	Aging	40 YEARS		30 YEARS SEE NOTE (3)	002		REF. (A)	ANALYSIS	SEE NOTE (3)
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A. AGING EVALUATION FORM M302-03 REV. 1, DATED 9/15/83 (CHRON 13376).	1. 2.1 E06 RADDS FOR ZS-5825A,B AND ZS-7602A,B; 8.0 E06 RADDS FOR ZS-5815A,B; 2.9 E05 RADDS FOR ZS-4304 AND ZS-4305; 1.5 E06 RADDS FOR REMAINING POSITION SWITCHES. 2. RADIATION QUALIFICATION IS INADEQUATE FOR ZS-5815A,B; SEE ACTION ITEM 39. 3. 30 YEAR QUALIFIED LIFE APPLIES TO POSITION SWITCHES OTHER

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Owner: IOWA ELECTRIC
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DOCUMENTATION REFERENCES:

NOTES:

THAN 5815A,B.

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Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: M302-03-002

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EQ Equip No: M302-03-003

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-4306 Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: OPD-AR Purchase Order Number: M- 144D Function/Service: POST ACCIDENT MONITORING/ CONTAINMENT TORUS PURGE INLET VALVE Accuracy: Spec: NA Location: RHR VALVE ROOM Floor Elevation: 757' -6"	Operating Time	1 HOUR	DATE CODES; UPPER: 7120 LOWER: 7209
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.5 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-4307 Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: OPD-AR Purchase Order Number: M-144D Function/Service: POST ACCIDENT MONITORING/REACTOR VESSEL CONTAINMENT PURGE INLET VALVE POSITION Accuracy: Spec: NA Location: RHR VALVE ROOM Floor Elevation: 757' - 6"	Operating Time	1 HOUR	DATE CODES; UPPER: 7105 LOWER: 7120
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.5 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Loc Dwg: E318/E6 Mfr Model Ref: V.P. M144D-2(5)-3							
Environment: HARSH EQ Sys No: 36 Elec Scheme: E122/13 VDR ID: NONE							
P&ID: M143/E2							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Loc Dwg: E318/E6 Mfr Model Ref: V.P. M144D-2(6)-3							
Environment: HARSH EQ Sys No: 36 Elec Scheme: E122/12 VDR ID: NONE							
P&ID: M143/E3							

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 Owner: IOWA ELECTRIC
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EQ Equip No: M302-03-005

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-4308 Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: OPD-AR Purchase Order Number: M-144D Function/Service: POST ACCIDENT MONITORING/ INBOARD SUPPRESSION POOL PURGE INLET VALVE POSITION Accuracy: Spec: NA Location: RHR VALVE ROOM Floor Elevation: 757' -6" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	1 HOUR	DATE CODES; UPPER: 7206 LOWER: 7206
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.5 E06	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-5815A Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: OPD-AR Purchase Order Number: M-144E Function/Service: POST ACCIDENT MONITORING/HVAC DAMPER POSITION Accuracy: Spec: NA Location: SGT ROOM Floor Elevation: 786' -0" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	RAD DOSE BASED ON A DISTANCE OF 10.5 FT FROM SGT FILTER (CALC 221-004 REV. 2)
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.0 E06	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Loc Dwg: E318/C6 Mfr Model Ref: V.P. M144D-2(7)-3 Environment: HARSH Elec Scheme: E122/12 EQ Sys No: 36 P&ID: M143/E3 VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: M643/A3 Mfr Model Ref: M144E-12 Environment: HARSH Elec Scheme: E113/11 EQ Sys No: 36 P&ID: M158/G3 VDR ID: NONE							

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 Facility: DUANE ARNOLD
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 EQ Equip No: M302-03-006

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EQ Equip No: M302-03-007

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-5815B Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: OPD-AR Purchase Order Number: M-144E Function/Service: PDST ACCIDENT MONITORING/HVAC DAMPER POSITION Accuracy: Spec: NA Location: SGT ROOM Floor Elevation: 786' - 0"	Operating Time	30 DAYS	RAD DOSE BASED ON A DISTANCE OF 10.5 FT FROM SGT FILTER (CALC 221-004 REV. 2)
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.0 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION	Operating Time	30 DAYS	DATE CODES: UPPER: 7209 LOWER: 7209
Plant I.D. Number: ZS-4305 Component:	Temperature (°F)	104	
POSITION SWITCH	Pressure (PSIG)	0	
Manufacturer:	Relative Humidity (%)	100	
MICRO SWITCH	Chemical Spray	NA	
Model Number:	Seismic	NA	
OPD-AR	Radiation (Rad)	2.9 E05	
Purchase Order Number:	Aging	40 YEARS	
M-144D	Submergence	NA	
Function/Service: POST ACCIDENT MONITORING/ SUPPRESSION POOL VACUUM BREAKER ISOLATION VLV POSITN Accuracy: Spec:			
NA Location: NE CRNR RM			
Floor Elevation: 735' - 7"			
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH Loc Dwg: M643/A3 Mfr Model Ref: M144E-11							
EQ Sys No: 36 P&ID: M158/C3 Elec Scheme: E113/11 VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH Loc Dwg: E316/E2 Mfr Model Ref: V.P. M144D-2(8)-3							
EQ Sys No: 36 P&ID: M143/B7 Elec Scheme: E122/23 VDR ID: NONE							

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: M302-03-008

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EQ Equip No: M302-03-009

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-7602A Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: OPD-AR Purchase Order Number: M-144E Function/Service: POST ACCIDENT MONITORING/STANDBY GAS TREATMENT SYSTEM INLET VALVE POSITION Accuracy: Spec: NA Location: SGT ROOM Floor Elevation: 786' - 0"	Operating Time	30 DAYS	DATE CODES; UPPER: 7206
	Temperature (°F)	104	LOWER: 7217
	Pressure (PSIG)	0	RAD DOSE BASED ON A
	Relative Humidity (%)	100	DISTANCE OF 21.5 FT FROM
	Chemical Spray	NA	SGT FILTER (CALC 221-004
	Seismic	NA	REV. 2)
	Radiation (Rad)	2.1 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-7602B Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: OPD-AR Purchase Order Number: M-144E Function/Service: POST ACCIDENT MONITORING/STANDBY GAS TREATMENT SYSTEM INLET VALVE POSITION Accuracy: Spec: NA Location: SGT ROOM Floor Elevation: 786' - 0"	Operating Time	30 DAYS	DATE CODES; UPPER: 7120
	Temperature (°F)	104	LOWER: 7120
	Pressure (PSIG)	0	RAD DOSE BASED ON A
	Relative Humidity (%)	100	DISTANCE OF 21.5 FT FROM
	Chemical Spray	NA	SGT FILTER (CALC 221-004
	Seismic	NA	REV. 2)
	Radiation (Rad)	2.1 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: Environment: EQ Sys No: P&ID: 1974 HARSH 36 M176/A4 Loc Dwg: E315/G3 Elec Scheme: E113/64 VDR ID: NONE Mfr Model Ref: V.P. M144E-6-2							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: Environment: EQ Sys No: P&ID: 1974 HARSH 36 M176/A4 Loc Dwg: E315/G3 Elec Scheme: E113/64 VDR ID: NONE Mfr Model Ref: V.P. M144E-5-2							

M302-03
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: M302-03-015

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EQ Equip No: M302-03-018

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-4304 Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: OPD-AR Purchase Order Number: M-144D Function/Service: POST ACCIDENT MONITORING SUPPRESSION POOL VACUUM BREAKER ISOLATION VLV POSITN Accuracy: Spec: NA Location: NE CRNR RM Floor Elevation: 735' - 7"	Operating Time	30 DAYS	DATE CODES; UPPER: 7128 LOWER: 7114
	Temperature (*F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.9 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-5825A Component: POSITION SWITCH Manufacturer: MICRO SWITCH Model Number: OPD-AR Purchase Order Number: M-144E Function/Service: POST ACCIDENT MONITORING/STANDBY GAS TREATMENT SYSTEM-AIR INTAKE VALVE POSITION Accuracy: Spec: NA Location: SGT ROOM Floor Elevation: 786' - 0"	Operating Time	30 DAYS	DATE CODES; UPPER: 7209 LOWER: 7209 RAD DOSE BASED ON A DISTANCE OF 21.5 FT FROM SGT FILTER (CALC 221-004 REV. 2)
	Temperature (*F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.1 E06	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH Loc Dwg: E316/E3 Elec Scheme: E122/23 Mfr Model Ref: V.P. M144D-2(9)-3							
EQ Sys No: 36 P&ID: M143/A7 VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH Loc Dwg: E315/G5 Elec Scheme: E113/11 Mfr Model Ref: V.P. M144E-48-1							
EQ Sys No: 36 P&ID: M158/F6 VDR ID: NONE							

M302-03

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: M302-03-019

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION	Operating Time	30 DAYS	DATE CODES; UPPER: 7206
Plant I.D. Number: ZS-5825B Component:	Temperature (*F)	104	LOWER: 7217
POSITION SWITCH	Pressure (PSIG)	0	RAD DOSE BASED ON A
Manufacturer:	Relative Humidity (%)	100	DISTANCE OF
Model Number: OPD-AR	Chemical Spray	NA	21.5 FT FROM SGT FILTER
Purchase Order Number: M-144E	Seismic	NA	(CALC 221-004 REV. 2)
Function/Service: POST ACCIDENT MONITDRING/ STANDBY GAS TREATMENT SYSTEM-AIR INTAKE VALVE POSITION Accuracy: Spec:	Radiation (Rad)	2.1 E06	
NA Location: SGT ROOM	Aging	40 YEARS	
Floor Elevation: 786' -0"	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (*F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:	Submergence		
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 36	P&ID: M158/D6				
Loc Dwg: E315/F5	Elec Scheme: E113/11	VDR ID: NONE					
Mfgr Model Ref: V.P. M144E-48-1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins:	Environment:	EQ Sys No:	P&ID:				
Loc Dwg:	Elec Scheme:	VDR ID:					
Mfgr Model Ref:							

NO07-03

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: POSITION SWITCH Manufacturer: NAMCO Model Number: EA-740 NUREG 0588 Applicable: YES Accuracy: Demo: NA	Operating Time	1 HOUR		30 DAYS	001		REF. A,C	TYPE TEST	NONE
	Temperature (°F)	SEE GEN NOTE 6		340	001		REF. A,C	TYPE TEST	NONE
	Pressure (PSIG)	SEE GEN NOTE 6		63	001		REF. A,C	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A,C	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	001		REF. A,C	TYPE TEST	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	4.3 E07		2.0 E08	001		REF. A,C	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (2)	001		REF. B,C	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	NDNE

DOCUMENTATION REFERENCES	NOTES
A . NAMCO CONTROLS REPORT NO. QTR111 REV 0 DATED 11/1/81 (CHRON 10539). TEST PROFILE IS FIGURE FOUND ON PAGE 10-11 OF THIS REPORT. B . AGING EVALUATION FORM NO07-03 REV. 1, DATED 8/12/83 (CHRON 12975). C . SECTION VII.F OF THIS SEMIANNUAL REPORT (RESPONSE TO	1 . STEAM AND CHEMICAL SPRAY AS DEFINED IN IEEE 382-1972 PART III, TABLE 1 AND IEEE 323-1974 APPENDIX A, TABLE A1. 2 . QUALIFIED LIFE MAY BE EXTENDED TO 40 YEARS REQUIRING REPLACEMENT OF COVER GASKETS AND OTHER ELASTOMER COMPONENTS AT 3 YEAR INTERVALS AND CONTACT BLOCK AT 20 YEARS.

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Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
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DOCUMENTATION REFERENCES:	NOTES:
<p>FRC/NRC COMMENTS ON EQUIPMENT ITEM 70 AND 71).</p>	<p>(PROCEDURAL INSTRUCTIONS ARE IN NAMCO REPORT QTR-111 REV. O, DATED 11/1/81, SECTION 4.O.)</p>

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQ Equip No: NO07-03-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR PROTECTION	Operating Time	1 HOUR	FUNCTIONS FOR REACTOR PRO- TECTION ON MSLB ONLY, FUNCTIONS FOR ALL ACCIDENTS AS SAFETY DISPLAY INSTRUMENTA- TION
Plant I.D. Number: ZS-4412 Component:	Temperature (°F)	SEE GENERAL NOTE 6	
POSITION SWITCH	Pressure (PSIG)	SEE GENERAL NOTE 6	
Manufacturer: NAMCO	Relative Humidity (%)	100	
Model Number: EA-740	Chemical Spray	DEMIN WATER	
Purchase Order Number: DCR-895	Seismic	NA	
Function/Service: REACTOR SHUTDOWN/ TRIP ON CLOSURE OF MAIN STEAM LINE ISOLATION VALVE	Radiation (Rad)	2.1 EO7	
Accuracy: Spec: NA Location: DRYWELL	Aging	40 YEARS	
Floor Elevation: 761'-4"	Submergence	NA	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR PROTECTION	Operating Time	1 HOUR	SEE REMARK FOR ZS-4412
Plant I.D. Number: ZS-4413 Component:	Temperature (°F)	300	
POSITION SWITCH	Pressure (PSIG)	1.8	
Manufacturer: NAMCO	Relative Humidity (%)	100	
Model Number: EA-740	Chemical Spray	NA	
Purchase Order Number: DCR-895	Seismic	NA	
Function/Service: REACTOR SHUTDOWN/ TRIP ON CLOSURE OF MAIN STEAM LINE ISOLATION VALVE	Radiation (Rad)	9.4 EO6	
Accuracy: Spec: NA Location: STEAM TUNNEL	Aging	40 YEARS	
Floor Elevation: 757'-6"	Submergence	NA	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1980	Environment: HARSH			EQ Sys No: 16		P&ID: M114/E3	
Loc Dwg: M340/D3	Elec Scheme: E122/11			VDR ID: NONE			
Mfgr Model Ref: V.P. E57-1-1, 2-1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1980 Environment: HARSH EQ Sys No: 16 P&ID: M114/E2							
Loc Dwg: M268/G2 Elec Scheme: E122/11 VDR ID: NONE							
Mfgr Model Ref: V.P. E57-1-1, 2-1							

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EQ Equip No: NO07-03-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR PROTECTION Plant I.D. Number: ZS-4415 Component: POSITION SWITCH Manufacturer: NAMCO Model Number: EA-740 Purchase Order Number: DCR-895 Function/Service: REACTOR SHUTDOWN/ TRIP ON CLOSURE OF MAIN STEAM LINE ISOLATION VALVE Accuracy: Spec: NA Location: ORYWELL Floor Elevation: 761' -4"	Operating Time	1 HOUR	SEE REMARK FOR ZS-4412
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
Flood Level Elevation: 744' -0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR PROTECTION Plant I.D. Number: ZS-4416 Component: POSITION SWITCH Manufacturer: NAMCO Model Number: EA-740 Purchase Order Number: DCR-895 Function/Service: REACTOR SHUTDOWN/ TRIP ON CLOSURE OF MAIN STEAM LINE ISOLATION VALVE Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757' -6"	Operating Time	1 HOUR	SEE REMARK FOR ZS-4412
	Temperature (°F)	300	
	Pressure (PSIG)	1.8	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.4 E06	
	Aging	40 YEARS	
Flood Level Elevation: 760' -0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1980 Environment: HARSH EQ Sys No: 16 P&ID: M114/D7 Loc Dwg: M340/C3 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: V.P. E57-1-1, 2-1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1980 Environment: HARSH EQ Sys No: 16 P&ID: M114/D8 Loc Dwg: E328/D3 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: V.P. E57-1-1, 2-1							

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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 EQ Equip No: NO07-03-005

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EQ Equip No: NO07-03-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR PROTECTION Plant I.D. Number: ZS-4418 Component: POSITION SWITCH Manufacturer: NAMCO Model Number: EA-740 Purchase Order Number: DCR-895 Function/Service: REACTOR SHUTDOWN/ TRIP ON CLOSURE OF MAIN STEAM LINE ISOLATION VALVE Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 761'-4" Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Operating Time	1 HOUR	SEE REMARK FOR ZS-4412
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR PROTECTION Plant I.D. Number: ZS-4419 Component: POSITION SWITCH Manufacturer: NAMCO Model Number: EA-740 Purchase Order Number: DCR-895 Function/Service: REACTOR SHUTDOWN/ TRIP ON CLOSURE OF MAIN STEAM LINE ISOLATION VALVE Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757'-6" Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Operating Time	1 HOUR	SEE REMARK FOR ZS-4412
	Temperature (°F)	300	
	Pressure (PSIG)	1.8	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.4 E06	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1980 Environment: HARSH EQ Sys No: 16 P&ID: M114/D3 Loc Dwg: M340/F3 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: V.P. E57-1-1, 2-1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1980 Environment: HARSH EQ Sys No: 16 P&ID: M114/D2 Loc Dwg: E328/F4 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: V.P. E57-1-1, 2-1							

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EQ Equip No: NO07-03-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR PROTECTION Plant I.D. Number: ZS-4420 Component: POSITION SWITCH Manufacturer: NAMCO Model Number: EA-740 Purchase Order Number: DCR-895 Function/Service: REACTOR SHUTDOWN/ TRIP ON CLOSURE OF MAIN STEAM LINE ISOLATION VALVE Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 761' - 4"	Operating Time	1 HOUR	SEE REMARK FOR ZS-4412
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA.	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
	Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Submergence		NA

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: REACTOR PROTECTION	Operating Time	1 HOUR	SEE REMARK FOR ZS-4412
Plant I.D. Number: ZS-4421 Component:	Temperature (°F)	300	
POSITION SWITCH	Pressure (PSIG)	1.8	
Manufacturer: NAMCO	Relative Humidity (%)	100	
Model Number: EA-740	Chemical Spray	NA	
Purchase Order Number: DCR-895	Seismic	NA	
Function/Service: REACTOR SHUTDOWN/ TRIP ON CLOSURE OF MAIN STEAM LINE ISOLATION VALVE	Radiation (Rad)	9.4 E06	
Accuracy: Spec: NA Location:	Aging	40 YEARS	
STEAM TUNNEL Floor Elevation: 757' -6"	Submergence	NA	
Flood Level Elevation: 760' -0" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1980 Environment: HARSH EQ Sys No: 16 P&ID: M114/E7 Loc Dwg: M340/E3 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: V.P. E57-1-1, 2-1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1980 Environment: HARSH EQ Sys No: 16 P&ID: M114/E8 Loc Dwg: E328/E4 Elec Scheme: E122/11 VDR ID: NONE Mfr Model Ref: V.P. E57-1-1, 2-1							

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: POSITION SWITCH Manufacturer: NAMCO Model Number: EA170-41302 NUREG 0588 Applicable: YES Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GEN NOTE 4	001		---	---	NONE SEE NOTE (2)
	Temperature (°F)	140		194 SEE GEN NOTE 7	001		---	---	NONE
	Pressure (PSIG)	0		SEE GEN NOTE 7	001		---	---	NONE
	Relative Humidity (%)	100		100 SEE GEN NOTE 7	001		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	5.9 E06		2.0 E08	001		REF. A	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	001		REF. B	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . NAMCO TEST REPORT NO. QTR-107, REVISION 0, DATED 3/11/81 (V.P. 11186-223-M44668-9-1). B . AGING EVALUATION FORM NO07-04 DATED 6/18/82 (CHRON 8111).	1 . QUALIFIED LIFE MAY BE EXTENDED TO 40 YEARS WITH A PERIODIC INSPECTION AND REPLACEMENT PROGRAM FOR ELASTOMER COMPONENTS AT 5 YEAR INTERVALS. (PROCEDURAL INSTRUCTIONS ARE IN NAMCO REPORT QTR-107 REV. 0, DATED 8/20/81, SECTION 4.0.) 2 . THIS EQUIPMENT WAS REVIEWED IN FRC TER C5257-499 DATED 8/18/82 AND CLASSIFIED AS CATEGORY I.A (EQUIPMENT

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DOCUMENTATION REFERENCES:	NOTES:
	QUALIFIED).

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EQ Equip No: NO07-04-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-8773A Component: POSITION SWITCH Manufacturer: NAMCO Model Number: EA170-41302 Purchase Order Number: DCR-932A Function/Service: POST ACCIDENT MONITORING/1C-353 EXHAUST DUCT ISOLATION Accuracy: Spec: NA Location: NW CRNR RM Floor Elevation: 716'-9" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (*F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-8773B Component: POSITION SWITCH Manufacturer: NAMCO Model Number: EA170-41302 Purchase Order Number: DCR-932A Function/Service: POST ACCIDENT MONITORING/1C-353 EXHAUST DUCT ISOLATION Accuracy: Spec: NA Location: NW CRNR RM Floor Elevation: 716'-9" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (*F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 36 P&ID: M187/C3 Loc Dwg: E316/F7 Elec Scheme: E113/64 VDR ID: NONE Mfr Model Ref: V.P. 11186-234-44668-8-2							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 36 P&ID: M187/C2 Loc Dwg: E316/F7 Elec Scheme: E113/65 VDR ID: NONE Mfr Model Ref: V.P. 11186-234-44668-8-2							

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: POSITION SWITCH Manufacturer: NAMCO Model Number: SAI-131 NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GEN NOTE 4	005		---	---	NONE
	Temperature (°F)	122		SEE GEN NOTE 7	005		---	---	NONE
	Pressure (PSIG)	0		SEE GEN NOTE 7	005		---	---	NONE
	Relative Humidity (%)	100		SEE GEN NOTE 7	005		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.8 E06		4.7 E06	005		REF. A	---	NONE
	Aging	40 YEARS		10 YEARS SEE NOTE (1)	005		REF. A	---	SEE NOTE (1)
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . AGING EVALUATION FORM NO07-05 REV. 1, DATED 9/1/83 (CHRON 13250).	1 . SEE ACTION ITEM 32.

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION	Operating Time	30 DAYS	TEMPERATURE IS FROM CALC 234-N-036 REV. 0
Plant I.D. Number: ZS-4640 Component: POSITION SWITCH	Temperature (*F)	122	
Manufacturer: NAMCO	Pressure (PSIG)	0	
Model Number: SAI-131	Relative Humidity (%)	100	
Purchase Order Number: M-123	Chemical Spray	NA	
Function/Service: POST ACCIDENT MONITDRING/RECIRC WATER SAMPLE	Seismic	NA	
Accuracy: Spec: NA Location: RWCU HEAT EXCH ROOM	Radiation (Rad)	1.8 EO6	
Floor Elevation: 786'-0"	Aging	40 YEARS	
Flood Level Elevation: 786'-7" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (*F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:			
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:	Submergence		

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 36	P&ID: M116/F7				
Loc Dwg: E321/E5	Elec Scheme: E122/10	VDR ID: NONE					
Mfgr Model Ref: WALKDOWN 10/81, SH 92 & 3/80, SH 54							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins:	Environment:	EQ Sys No:	P&ID:				
Loc Dwg:	Elec Scheme:	VDR ID:					
Mfgr Model Ref:							

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: POSITON SWITCH Manufacturer: NAMCO Model Number: EA-180 NUREG 0588 Applicable: YES Accuracy: Demo: NA	Operating Time	1 HOUR		30 DAYS	001		REF. A	TYPE TEST	NONE
	Temperature (°F)	SEE GENERAL NOTE 6		340	001		REF. A	TYPE TEST	NONE
	Pressure (PSIG)	SEE GENERAL NOTE 6		105	001		REF. A	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	001		REF. A	TYPE TEST	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	2.1 E07		2.0 E08	001		REF. A	TYPE TEST	NONE
	Aging	40 YEARS		SEE NOTE (2)	001		REF. B	TYPE TEST/ ANALYSIS	SEE NOTE (2)
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . NAMCO CONTROLS REPORT QTR-105 REV. 3, DATED 8/20/81. TEST PROFILE IS FIGURE 2 OF THIS REPORT. B . AGING EVALUATION FORM NO07-08 REV. O, DATED 8/12/83 (CHRON 13249).	1 . STEAM AND CHEMICAL SPRAY AS DEFINED IN IEEE 382-1972 PART III, TABLE 1, AND IEEE 323-1974 APPENDIX A, TABLE A1. 2 . QUALIFIED LIFE MAY BE EXTENDED TO 40 YEARS BY REPLACEMENT OF COVER GASKETS AND OTHER ELASTOMER COMPONENTS AT 3 YEAR INTERVALS AND CONTACT BLOCK AT 20 YEARS. (PROCEDURAL INSTRUCTIONS ARE IN NAMCO REPORT QTR-105 REV. 3, DATED

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DOCUMENTATION REFERENCES:	NOTES:
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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION	Operating Time	1 HOUR	
Plant I.D. Number: ZS-4639 Component: POSITON SWITCH	Temperature (*F)	SEE GENERAL NOTE 6	
Manufacturer: NAMCO	Pressure (PSIG)	SEE GENERAL NOTE 6	
Model Number: EA-180	Relative Humidity (%)	100	
Purchase Order Number: DCR-895	Chemical Spray	DEMIN WATER	
Function/Service: POST ACCIDENT MONITORING/RECIRC WATER SAMPLE	Seismic	NA	
Accuracy: Spec: NA Location: DRYWELL	Radiation (Rad)	2.1 E07	
Floor Elevation: 798'-0"	Aging	40 YEARS	
Flood Level Elevation: 800'-0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (*F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:	Submergence		
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981	Environment: HARSH	EQ Sys No: 36	P&ID: M116/F6				
Loc Dwg: E330/B5	Elec Scheme: E122/10	VDR ID: NONE					
Mfgr Model Ref: V.P. E57-1-1, 2-1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins:	Environment:	EQ Sys No:	P&ID:				
Loc Dwg:	Elec Scheme:	VDR ID:					
Mfgr Model Ref:							

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Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: NECI Model Number: N145C3023 NUREG 0588 Applicable: NO Accuracy: Demo: USAS C96.1	Operating Time	REF. C		REF. C	001		REF. A, C	TYPE TEST	NONE
	Temperature (*F)	300		349	001		REF. A, C	TYPE TEST	NONE
	Pressure (PSIG)	1.5		.25	001		REF. A, C	TYPE TEST	NONE
	Relative Humidity (%)	100		90	001		REF. A, C	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	7.2 E06		2.0 E08	032		REF. B, C	ANALYSIS	NONE
	Aging	40 YEARS		40 YEARS	001		REF. B, D	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . GE LETTER G-KE-O-159, D. BUTCHER TO P. WARO DATED 9/30/80 (CHRON 2572) NSE 80224, 80229, 80247. B . AGING EVALUATION FORM NO70-02 REV 1 DATED 8/10/83 (CHRON 12857). C . SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105).	

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Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
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DOCUMENTATION REFERENCES:	NOTES:
<p>D . WALKDOWN RESULTS DATED 6/22/83 (CHRON 12242).</p>	

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: N070-02-001

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EQ Equip No: N070-02-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2262A Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: NECI	Temperature (°F)	300	
Model Number: N145C3023	Pressure (PSIG)	1.5	
Purchase Order Number: APED	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/HPCI LEAK DET-VENT DUCT INLET	Chemical Spray	NA	
	Seismic	NA	
Accuracy: Spec: USAS C96.1 Location: HPCI ROOM	Radiation (Rad)	2.1 EO3	
Floor Elevation: 716'-9"	Aging	40 YEARS	
Flood Level Elevation: 717'-2" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2262B Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: NECI	Temperature (°F)	300	
Model Number: N145C3023	Pressure (PSIG)	1.5	
Purchase Order Number: APED	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/HPCI LEAK DET-VENT DUCT INLET	Chemical Spray	NA	
	Seismic	NA	
Accuracy: Spec: USAS C96.1 Location: HPCI ROOM	Radiation (Rad)	2.1 EO3	
Floor Elevation: 716'-9"	Aging	40 YEARS	
Flood Level Elevation: 717'-2" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	YES	NO	NO	NA
Qual Life Begins: 1974		Environment: HARSH		EQ Sys No: 27		P&ID: M122/A4	
Loc Dwg: E317/C2		Elec Scheme: E124/6		VDR ID: E41-NO28A			
Mfr Model Ref: V.P. APED E41-13-2,SH 25							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	YES	NO	NO	NA
Qual Life Begins: 1974		Environment: HARSH		EQ Sys No: 27		P&ID: M122/A4	
Loc Dwg: E317/C2		Elec Scheme: E124/6		VDR ID: E41-NO28B			
Mfr Model Ref: V.P. APED E41-13-2,SH 25							

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: N070-02-003

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EQ Equip No: N070-02-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2263A Component:	Temperature (°F)	300	
TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer:	Pressure (PSIG)	1.5	
NECI	Relative Humidity (%)	100	
Model Number: N145C3023	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/HPCI LEAK DET-VENT DUCT OUTLET	Radiation (Rad)	2.1 EO3	
Accuracy: Spec: USAS C96.1 Location: HPCI ROOM	Aging	40 YEARS	
Floor Elevation: 716'-9"	Submergence	NA	
Flood Level Elevation: 717'-2" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2263B Component:	Temperature (°F)	300	
TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer:	Pressure (PSIG)	1.5	
NECI	Relative Humidity (%)	100	
Model Number: N145C3023	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/HPCI LEAK DET-VENT DUCT OUTLET	Radiation (Rad)	2.1 EO3	
Accuracy: Spec: USAS C96.1 Location: HPCI ROOM	Aging	40 YEARS	
Floor Elevation: 716'-9"	Submergence	NA	
Flood Level Elevation: 717'-2" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	YES	NO	NO	NA

Qual Life Begins: 1974
 Environment: HARSH
 EQ Sys No: 27
 P&ID: M122/A3
 Loc Dwg: M661/D4
 Elec Scheme: E124/6
 VDR ID: E41-N029A
 Mfr Model Ref: V.P. APED E41-13-2,SH 25

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	YES	NO	NO	NA

Qual Life Begins: 1974
 Environment: HARSH
 EQ Sys No: 27
 P&ID: M122/A3
 Loc Dwg: M661/D4
 Elec Scheme: E124/6
 VDR ID: E41-N029B
 Mfr Model Ref: V.P. APED E41-13-2,SH 25

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Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
Docket No: 50-331
EQ Equip No: N070-02-005

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EQ Equip No: N070-02-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2264A Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: NECI	Temperature (°F)	300	
Model Number: N145C3023	Pressure (PSIG)	1.5	
Purchase Order Number: APED	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/HPCI LEAK DET-EMERG AREA COOLER	Chemical Spray	NA	
	Seismic	NA	
Accuracy: Spec: USAS C96.1 Location: HPCI ROOM	Radiation (Rad)	2.1 EO3	
Floor Elevation: 731'-9"	Aging	40 YEARS	
Flood Level Elevation: 717'-2" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2264B Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: NECI	Temperature (°F)	300	
Model Number: N145C3023	Pressure (PSIG)	1.5	
Purchase Order Number: APED	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/HPCI LEAK DET-EMERG AREA COOLER	Chemical Spray	NA	
	Seismic	NA	
Accuracy: Spec: USAS C96.1 Location: HPCI ROOM	Radiation (Rad)	2.1 EO3	
Floor Elevation: 731'-9"	Aging	40 YEARS	
Flood Level Elevation: 717'-2" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	YES	NO	NO	NA

Qual Life Begins: 1974
Environment: HARSH
EQ Sys No: 27
P&ID: M122/A3
Loc Dwg: E317/C3
Elec Scheme: E124/7
VDR ID: E41-NO30A
Mfr Model Ref: V.P. APED E41-13-2,SH 25

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	YES	NO	NO	NA

Qual Life Begins: 1974
Environment: HARSH
EQ Sys No: 27
P&ID: M122/A3
Loc Dwg: E317/C3
Elec Scheme: E124/7
VDR ID: E41-NO30B
Mfr Model Ref: V.P. APED E41-13-2,SH 25

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 Facility: DUANE ARNOLD
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 EQ Equip No: NO70-02-007

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EQ Equip No: NO70-02-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2446A Component:	Temperature (°F)	300	
TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer:	Pressure (PSIG)	0.1	
NECI	Relative Humidity (%)	100	
Model Number: N145C3023	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RCIC EQUIPMENT AREA VENT AIR INLET TEMPERATURE	Radiation (Rad)	2.1 EO3	
Accuracy: Spec: 6F Location: RCIC ROOM	Aging	40 YEARS	
Floor Elevation: 724' - 6"	Submergence	NA	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2446B Component:	Temperature (°F)	300	
TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer:	Pressure (PSIG)	0.1	
NECI	Relative Humidity (%)	100	
Model Number: N145C3023	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RCIC EQUIPMENT AREA VENT AIR INLET TEMPERATURE	Radiation (Rad)	2.1 EO3	
Accuracy: Spec: 6F Location: RCIC ROOM	Aging	40 YEARS	
Floor Elevation: 724' - 6"	Submergence	NA	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	YES	NO	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 27		P&ID: M124/B8	
Loc Dwg: E317/C6		Elec Scheme: E124/G			VDR ID: E51-NO21A		
Mfr Model Ref: V.P. 7884-APED-E51-NO21A-19							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	YES	NO	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 27		P&ID: M124/B8	
Loc Dwg: E317/C6	Elec Scheme: E124/G			VDR ID: E51-NO21B			
Mfr Model Ref: V.P. 7884-APED-E51-NO21B-19							

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 Facility: DUANE ARNOLD
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EQ Equip No: NO70-02-010

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2447A Component:	Temperature (°F)	300	
TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer:	Pressure (PSIG)	0.1	
NECI	Relative Humidity (%)	100	
Model Number: N145C3023	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RCIC EQUIPMENT AREA VENT AIR OUTLET TEMPERATURE Accuracy: Spec:	Radiation (Rad)	2.1 E03	
6F Location: RCIC ROOM	Aging	40 YEARS	
Floor Elevation: 716' - 9"	Submergence	NA	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2447B Component:	Temperature (°F)	300	
TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer:	Pressure (PSIG)	0.1	
NECI	Relative Humidity (%)	100	
Model Number: N145C3023	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RCIC EQUIPMENT AREA VENT AIR OUTLET TEMPERATURE Accuracy: Spec:	Radiation (Rad)	2.1 E03	
6F Location: RCIC ROOM	Aging	40 YEARS	
Floor Elevation: 716' - 9"	Submergence	NA	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	YES	NO	NA
Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 27	P&ID: M124/B8				
Loc Dwg: E317/D5	Elec Scheme: E124/6	VDR ID: E51-NO22A					
Mfr Model Ref: V.P.	7884-APED-E51-NO22A-22						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	YES	NO	NA
Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 27	P&ID: M124/B8				
Loc Dwg: E317/D5	Elec Scheme: E124/6	VDR ID: E51-NO22B					
Mfr Model Ref: V.P.	7884-APED-E51-NO22B-22						

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EQ Equip No: NO70-02-012

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2451A Component:	Temperature (°F)	300	
TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer:	Pressure (PSIG)	0.1	
NECI	Relative Humidity (%)	100	
Model Number: N145C3023	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RCIC EQUIPMENT AREA TEMPERATURE	Radiation (Rad)	2.1 E03	
Accuracy: Spec: 6F Location: RCIC ROOM	Aging	40 YEARS	
Floor Elevation: 716'-9"	Submergence	NA	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2451B Component:	Temperature (°F)	300	
TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer:	Pressure (PSIG)	0.1	
NECI	Relative Humidity (%)	100	
Model Number: N145C3023	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RCIC EQUIPMENT AREA TEMPERATURE	Radiation (Rad)	2.1 E03	
Accuracy: Spec: 6F Location: RCIC ROOM	Aging	40 YEARS	
Floor Elevation: 716'-9"	Submergence	NA	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	YES	NO	NA
Qual Life Begins: 1974		Environment: HARSH		EQ Sys No: 27		P&ID: M124/B7	
Loc Dwg: E317/C5		Elec Scheme: E124/7		VDR ID: E51-NO23A			
Mfr Model Ref: V.P. 7884-APED-E51-NO23A-22							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	YES	NO	NA
Qual Life Begins: 1974		Environment: HARSH		EQ Sys No: 27		P&ID: M124/B7	
Loc Dwg: E317/C5		Elec Scheme: E124/7		VDR ID: E51-NO23B			
Mfr Model Ref: V.P. 7884-APED-E51-NO23B-22							

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EQ Equip No: NO70-02-014

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION Plant I.D. Number: TE-2522A Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: NECI Model Number: N145C3023 Purchase Order Number: APED Function/Service: PRIMARY CONTAINMENT ISOLATION/SUPPRESSION POOL AREA LEAK DET-VENT Accuracy: Spec: 6F Location: TORUS ROOM NORTH Floor Elevation: 716'-9"	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION Plant I.D. Number: TE-2522B Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: NECI Model Number: N145C3023 Purchase Order Number: APED Function/Service: PRIMARY CONTAINMENT ISOLATION/SUPPRESSION POOL AREA LEAK DET-VENT Accuracy: Spec: 6F Location: TORUS ROOM SOUTH Floor Elevation: 716'-9"	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	YES	YES	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M125/B4 Loc Dwg: M646/C3 Elec Scheme: E124/6 VDR ID: E51-NO26A Mfr Model Ref: V.P. APED E51-16-1,SH 23							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	YES	YES	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M125/B3 Loc Dwg: M660/H8 Elec Scheme: E124/6 VDR ID: E51-NO26B Mfr Model Ref: V.P. APED E51-16-1,SH 23							

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQ Equip No: NO70-02-016

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2522C Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: NECI	Temperature (*F)	277	
Model Number: N145C3023	Pressure (PSIG)	1.2	
Purchase Order Number: APED	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/SUPPRESSION POOL AREA LEAK DET-VENT	Chemical Spray	NA	
Accuracy: Spec: 6F	Seismic	NA	
Location: TORUS ROOM SOUTH	Radiation (Rad)	1.0 E06	
Floor Elevation: 716'-9"	Aging	40 YEARS	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2522D Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: NECI	Temperature (*F)	277	
Model Number: N145C3023	Pressure (PSIG)	1.2	
Purchase Order Number: APED	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/SUPPRESSION POOL AREA LEAK DET-VENT	Chemical Spray	NA	
Accuracy: Spec: 6F	Seismic	NA	
Location: TORUS ROOM SOUTH	Radiation (Rad)	1.0 E06	
Floor Elevation: 716'-9"	Aging	40 YEARS	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	YES	YES	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M125/A4 Loc Dwg: M660/F7 Elec Scheme: E124/6 VDR ID: E51-NO26C Mfr Model Ref: V.P. APED E51-16-1, SH 23							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	YES	YES	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M125/A3 Loc Dwg: M660/D5 Elec Scheme: E124/6 VDR ID: E51-NO26D Mfr Model Ref: V.P. APED E51-16-1, SH 23							

NO70-02

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: NO70-02-017

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 281
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 Date: 09/22/83

11186-234-NP-1

EQ Equip No: NO70-02-018

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION Plant I.D. Number: TE-2523A Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: NECI Model Number: N145C3023 Purchase Order Number: APED Function/Service: PRIMARY CONTAINMENT ISOLATION/SUPPRESSION POOL AREA LEAK DET-VENT Accuracy: Spec: 6F Location: TORUS ROOM NORTH Floor Elevation: 716' - 9"	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION Plant I.D. Number: TE-2523B Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: NECI Model Number: N145C3023 Purchase Order Number: APED Function/Service: PRIMARY CONTAINMENT ISOLATION/SUPPRESSION POOL AREA LEAK DET-VENT Accuracy: Spec: 6F Location: TORUS ROOM NORTH Floor Elevation: 716' - 9"	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
	Temperature (°F)	277	
	Pressure (PSIG)	1.2	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	YES	YES	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M125/B4 Loc Dwg: E316/E3 Elec Scheme: E124/6 Mfr Model Ref: V.P. APED E51-16-1, SH 23 VDR ID: E51-NO27A							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	YES	YES	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M125/B3 Loc Dwg: E316/E3 Elec Scheme: E124/6 Mfr Model Ref: V.P. APED E51-16-1, SH 23 VDR ID: E51-NO27B							

NO70-02
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: NO70-02-019

EQUIPMENT QUALIFICATION REPORT DATA SHEET

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EQ Equip No: NO70-02-020

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION Plant I.D. Number: TE-2523C Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: NECI Model Number: N145C3023 Purchase Order Number: APED Function/Service: PRIMARY CONTAINMENT ISOLATION/SUPPRESSION POOL AREA LEAK DET-VENT Accuracy: Spec: 6F Location: TORUS ROOM NORTH Floor Elevation: 716'-9"	Operating Time Temperature (°F) Pressure (PSIG) Relative Humidity (%) Chemical Spray Seismic Radiation (Rad) Aging	SEE REMARK 277 1.2 100 NA NA 1.0 EO6 40 YEARS	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	YES	YES	NO	NA
Qual Life Begins: 1974 Loc Dwg: E316/E3 Mfr Model Ref: V.P. APED E51-16-1,SH 23	Environment: HARSH	EQ Sys No: 27	P&ID: M125/A4	VDR ID: E51-NO27C			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION Plant I.D. Number: TE-2523D Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: NECI Model Number: N145C3023 Purchase Order Number: APED Function/Service: PRIMARY CONTAINMENT ISOLATION/SUPPRESSION POOL AREA LEAK DET-VENT Accuracy: Spec: 6F Location: TORUS ROOM NORTH Floor Elevation: 716'-9"	Operating Time Temperature (°F) Pressure (PSIG) Relative Humidity (%) Chemical Spray Seismic Radiation (Rad) Aging	SEE REMARK 277 1.2 100 NA NA 1.0 EO6 40 YEARS	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	YES	YES	NO	NA
Qual Life Begins: 1974 Loc Dwg: E316/E3 Mfr Model Ref: V.P. APED E51-16-1,SH 23	Environment: HARSH	EQ Sys No: 27	P&ID: M125/A3	VDR ID: E51-NO27D			

NO70-02

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: NO70-02-021

EQUIPMENT QUALIFICATION REPORT
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Sheet No. 283

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Date: 09/22/83

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EQ Equip No: NO70-02-022

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2526A Component:	Temperature (°F)	277	
TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer:	Pressure (PSIG)	1.2	
NECI	Relative Humidity (%)	100	
Model Number: N145C3023	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/SUPPRESSION POOL LEAK DET AMB TEMPERATURE	Radiation (Rad)	1.0 E06	
Accuracy: Spec: 6F Location: TORUS ROOM NORTH	Aging	40 YEARS	
Floor Elevation: 716'-9"	Submergence	NA	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2526B Component:	Temperature (°F)	277	
TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer:	Pressure (PSIG)	1.2	
NECI	Relative Humidity (%)	100	
Model Number: N145C3023	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/SUPPRESSION POOL LEAK DET AMB TEMPERATURE	Radiation (Rad)	1.0 E06	
Accuracy: Spec: 6F Location: TORUS ROOM NORTH	Aging	40 YEARS	
Floor Elevation: 716'-9"	Submergence	NA	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	YES	YES	NO	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 27		P&ID: M125/B4	
Loc Dwg: M646/F4	Elec Scheme: E124/7			VDR ID: E51-NO25A			
Mfr Model Ref:	V.P. APED E51-16-1,SH 19						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	YES	YES	NO	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 27		P&ID: M125/B2	
Loc Dwg: M646/B8		Elec Scheme: E 124/7			VDR ID: E51-NO25B		
Mfr Model Ref: V.P. APED E51-16-1,SH 19							

N070-02

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: N070-02-023

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 284
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EQ Equip No: N070-02-024

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2526C Component:	Temperature (°F)	277	
TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer:	Pressure (PSIG)	1.2	
NECI	Relative Humidity (%)	100	
Model Number: N145C3023	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/SUPPRESSION POOL LEAK DET AMB TEMPERATURE	Radiation (Rad)	1.0 E06	
Accuracy: Spec: 6F Location: TORUS ROOM SOUTH	Aging	40 YEARS	
Floor Elevation: 716'-9"	Submergence	NA	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2526D Component:	Temperature (°F)	277	
TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer:	Pressure (PSIG)	1.2	
NECI	Relative Humidity (%)	100	
Model Number: N145C3023	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/SUPPRESSION POOL LEAK DET AMB TEMPERATURE	Radiation (Rad)	1.0 E06	
Accuracy: Spec: 6F Location: TORUS ROOM NORTH	Aging	40 YEARS	
Floor Elevation: 716'-9"	Submergence	NA	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	YES	YES	NO	NA
Qual Life Begins: 1974	Environment: HARSH		EQ Sys No: 27		P&ID: M125/A4		
Loc Dwg: M660/D4	Elec Scheme: E124/7		VDR ID: E51-NO25C				
Mfrgr Model Ref: V.P. APED E51-16-1,SH 19							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	YES	YES	NO	NA
Qual Life Begins: 1974	Environment: HARSH		EQ Sys No: 27		P&ID: M125/A2		
Loc Dwg: M646/B2	Elec Scheme: E124/7		VDR ID: E51-NO25D				
Mfr Model Ref:	V.P. APED E51-16-1,SH 19						

NO70-02
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: NO70-02-031

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EQ Equip No: NO70-02-035

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2453 Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: NECI	Temperature (°F)	300	
Model Number: N145C3023	Pressure (PSIG)	0.1	
Purchase Order Number: APED	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RCIC EQUIP ROOM STM LEAK DET	Chemical Spray	NA	
Accuracy: Spec: 6F Location: RCIC ROOM	Seismic	NA	
Floor Elevation: 716'-9"	Radiation (Rad)	2.1 EO3	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	SEE REMARK	SECTION VII.H OF SEMIANNUAL EQ REPORT (RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 104 AND 105) PROVIDES BASIS FOR OPERATING TIME.
Plant I.D. Number: TE-2265 Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: NECI	Temperature (°F)	300	
Model Number: N145C3023	Pressure (PSIG)	1.5	
Purchase Order Number: APED	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/HPCI EQUIPMENT LEAK DETECTION SYSTEM	Chemical Spray	NA	
Accuracy: Spec: USAS C96.1 Location: HPCI ROOM	Seismic	NA	
Floor Elevation: 716'-9"	Radiation (Rad)	2.1 EO3	
Flood Level Elevation: 717'-2" Above Flood Level: Yes: X No:	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	YES	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M124/C7 Loc Dwg: M661/B5 Elec Scheme: E124/7 VDR ID: E51-NO11 Mfr Model Ref: V.P. APED E51-16-1,SH 19							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	YES	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M122/A2 Loc Dwg: M660/C3 Elec Scheme: E124/7 VDR ID: E41-NO24 Mfr Model Ref: GE DATA SHEET 234A9301RS, SHEET 16							

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: NECI Model Number: UNKNOWN NUREG 0588 Applicable: NO Accuracy: Demo: NONE	Operating Time	30 DAYS		SEE NOTE (1)	001		---	NONE	SEE NOTE (1)
	Temperature (°F)	140		SEE GENERAL NOTE 4	001		---	---	SEE GENERAL NOTE 4
	Pressure (PSIG)	0		SEE GENERAL NOTE 4	001		---	---	SEE GENERAL NOTE 4
	Relative Humidity (%)	100		SEE GENERAL NOTE 4	001		---	---	SEE GENERAL NOTE 4
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	5.9 E06		SEE NOTE (1)	001		---	NONE	SEE NOTE (1)
	Aging	40 YEARS		SEE NOTE (1)	001		---	NONE	SEE NOTE (1)
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
	1 . SEE ACTION ITEM 37.

NO70-03
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: NO70-03-001

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 287
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EQ Equip No: NO70-03-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: TE - 1945C Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: NECI Model Number: UNKNOWN Purchase Order Number: APED Function/Service: POST ACCIDENT MONITORING/RHR HEAT EXCHANGER OUTLET TEMPERATURE Accuracy: Spec: + - 3.75F Location: NW CRNR RM Floor Elevation: 731' - 4"	Operating Time	30 DAYS	
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence		NA

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: TE-1945E Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: NECI Model Number: UNKNOWN Purchase Order Number: APED Function/Service: POST ACCIDENT MONITORING/RHR HEAT EXCHANGER OUTLET TEMPERATURE Accuracy: Spec: + -3.75F Location: SE CRNR RM Floor Elevation: 731' - 4"	Operating Time	30 DAYS	
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M119/E3 Loc Dwg: E316/E7 Elec Scheme: E121/58 VDR ID: NONE Mfr Model Ref: WALKDOWN TRIP RPT DATED 6/22/83 (CHRON 12242)							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M120/D7 Loc Dwg: E317/E3 Elec Scheme: E121/58 VDR ID: NONE Mfr Model Ref: WALKDOWN TRIP RPT DATED 6/22/83 (CHRON 12242)							

0004-02

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: 600V CABLE Manufacturer: OKONITE Model Number: NA NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		130 DAYS	001		REF. A,C	TYPE TEST	NONE
	Temperature (°F)	SEE GEN NOTE 6		345	001		REF. A,C	TYPE TEST	NONE
	Pressure (PSIG)	SEE GEN NOTE 6		112	001		REF. A,C	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A,C	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	001		REF. A,C	TYPE TEST	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.6 E08		2.0 E08	001		REF. A,C	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (2)	001		REF. B,C	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . OKONITE REPORT NO. NQRN-1 AND OKONITE LETTER, J.S. LASKY TO J.L. HURLEY DATED 6/4/80 (CHRON 1462). TEST PROFILE IS APPENDIX 5 OF THIS REPORT. B . AGING EVALUATION FORM 0004-02 REV. 1, DATED 9/9/83 (CHRON 13325). C . SECTION VII.K OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC	1 . SPRAY SOLUTIONS OF BORIC ACID AND SODIUM THIOSULFATE AND SODIUM HYDROXIDE IN TAP WATER USED IN TEST EXCEEDS REQUIREMENT OF DEMINERALIZED WATER SPRAY. 2 . QUALIFIED LIFE OF 40 YEARS ASSUMES CONTINUOUS AMBIENT TEMPERATURE OF 150F.

0004-02

Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
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DOCUMENTATION REFERENCES:	NOTES:
<p>COMMENTS ON TER EQUIPMENT ITEM 109.</p>	

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EQ Equip No: 0004-02-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS Plant I.D. Number: CABLE-INSTR-OKO Component: 600V CABLE Manufacturer: OKONITE Model Number: NA Purchase Order Number: E-019A Function/Service: SUPPORT/SUPPLY INSTRUMENT SIGNAL Accuracy: Spec: NA Location: VARIOUS Floor Elevation: VARIOUS	Operating Time	30 DAYS	RAD DOSE IS FROM SGT ROOM (HIGHEST RAD DOSE AREA) TEMP, PRESS, AND CHEMICAL SPRAY IS FROM DRYWELL.
	Temperature (*F)	SEE GEN NOTE 6	
	Pressure (PSIG)	SEE GEN NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	1.6 E08	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS Plant I.D. Number: CABLE-POWER-OKO Component: 600V CABLE Manufacturer: OKONITE Model Number: NA Purchase Order Number: E-019 Function/Service: SUPPORT/SUPPLY POWER TO EQUIPMENT Accuracy: Spec: NA Location: VARIOUS Floor Elevation: VARIOUS	Operating Time	30 DAYS	RAD DOSE IS FROM SGT ROOM (HIGHEST RAD DOSE AREA) TEMP, PRESS, AND CHEMICAL SPRAY IS FROM DRYWELL
	Temperature (°F)	SEE GEN NOTE 6	
	Pressure (PSIG)	SEE GEN NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	1.6 E08	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1978 Loc Dwg: NA Mfr Model Ref: MRS-E-019A Environment: HARSH Elec Scheme: NA EQ Sys No: 32 P&ID: NA VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1978 Loc Dwg: NA Mfr Model Ref: P.O. E-019BC Environment: HARSH Elec Scheme: NA EQ Sys No: 32 P&ID: NA VDR ID: NONE							

0004-02

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: 0004-02-003

EQUIPMENT QUALIFICATION REPORT DATA SHEET

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	RAD DOSE IS FROM SGT ROOM (HIGHEST RAD DOSE AREA). TEMP, PRESS, AND CHEMICAL SPRAY IS FROM DRYWELL
Plant I.D. Number: CABLE-CONTROL-OKO Component: 600V CABLE	Temperature (°F)	SEE GEN NOTE 6	
Manufacturer: OKONITE	Pressure (PSIG)	SEE GEN NOTE 6	
Model Number: NA	Relative Humidity (%)	100	
Purchase Order Number: E-019	Chemical Spray	DEMIN WATER	
Function/Service: SUPPORT/SUPPLY CONTROL SIGNAL	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	1.6 E08	
Location: VARIOUS	Aging	40 YEARS	
Floor Elevation: VARIOUS			
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (°F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:			
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:	Submergence		

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH Loc Dwg: NA Elec Scheme: NA Mfr Model Ref: P.O E-019BC EQ Sys No: 32 P&ID: NA VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins: Environment: Loc Dwg: Elec Scheme: Mfr Model Ref: EQ Sys No: P&ID: VDR ID:							

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: POSITION TRANSMITTER Manufacturer: OHMITE Model Number: H NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GENERAL NOTE 4	001		---	---	NONE
	Temperature (*F)	140		SEE GENERAL NOTE 7	001		---	---	NONE
	Pressure (PSIG)	0		SEE GENERAL NOTE 7	001		---	---	NONE
	Relative Humidity (%)	100		SEE GENERAL NOTE 7	001		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	8.1 E06		5.0 E09 SEE NOTE (1)	002		REF. A	ANALYSIS	NONE
	Aging	40 YEARS		40 YEARS	001		REF. A	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . AGING EVALUATION FORM 0026-01 DATED 9/20/82 (CHRON 10192).	1 . EQUIPMENT CONTAINS NO SUBCOMPONENTS SUSCEPTIBLE TO RADIATION OR THERMAL AGING.

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EQ Equip No: 0026-01-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL SERVICE WATER Plant I.D. Number: ZT-1947 Component: POSITION TRANSMITTER Manufacturer: OHMITE Model Number: H Purchase Order Number: M-144A Function/Service: REACTOR CORE COOLING/ TRANSMIT VALVE POSITION SIGNAL Accuracy: Spec: NA Location: NW CRNR RM Floor Elevation: 732' -0"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL SERVICE WATER Plant I.D. Number: ZT-2046 Component: POSITION TRANSMITTER Manufacturer: OHMITE Model Number: H Purchase Order Number: M-144A Function/Service: REACTOR CORE COOLING/ TRANSMIT VALVE POSITION SIGNAL Accuracy: Spec: NA Location: HPCI ROOM Floor Elevation: 731' -9"	Operating Time	30 DAYS	MO-2046 AND ZT-2046 ARE NOT REQUIRED FOR HELBS POSTULATED IN THE HPCI ROOM.
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.1 E06	
	Aging	40 YEARS	
Flood Level Elevation: 717' -2" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 13 P&ID: M113/C7 Loc Dwg: E316/E8 Elec Scheme: E121/58A VDR ID: NONE Mfr Model Ref: V.P. M144A-120 & V.P. M144A-166, CHRON 7972							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	NO	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 13 P&ID: M113/C5 Loc Dwg: M265/D2 Elec Scheme: E121/58 VDR ID: NONE Mfr Model Ref: V.P. M144A-120 & V.P. M144A-166, CHRON 7972							

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: TEMPERATURE SWITCH Manufacturer: PENN Model Number: A-19ABB-6 NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GEN NOTE 4	001		---	---	NONE
	Temperature (*F)	104		SEE GEN NOTE 7	001		---	---	NONE
	Pressure (PSIG)	0		SEE GEN NOTE 7	001		---	---	NONE
	Relative Humidity (%)	100		SEE GEN NOTE 7	001		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	2.5 E07		SEE NOTE (1)	001		---	---	NONE
	Aging	40 YEARS		SEE NOTE (1)	001		---	---	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
	1. SEE ACTION ITEM NO. 25

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EQ Equip No: P129-02-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: TS-5808A Component: TEMPERATURE SWITCH Manufacturer: PENN Model Number: A-19ABB-6 Purchase Order Number: M-81 Function/Service: MITIGATE RADIOACTIVE RELEASE/SGTS ELECTRICAL HEATER HI LIMIT Accuracy: Spec: NA Location: SGT ROOM Floor Elevation: 786'-0"	Operating Time	30 DAYS	RAD DOSE BASED ON A DISTANCE OF 5 FT. FROM SGTS FILTER (CALC 221-004 REV 2)
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.5 E07	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: TS-5808B Component: TEMPERATURE SWITCH Manufacturer: PENN Model Number: A-19ABB-6 Purchase Order Number: M-81 Function/Service: MITIGATE RADIOACTIVE RELEASE/SGTS ELECTRICAL HEATER HI LIMIT Accuracy: Spec: NA Location: SGT ROOM Floor Elevation: 786'-0"	Operating Time	30 DAYS	RAD DOSE BASED ON A DISTANCE OF 5 FT. FROM SGTS FILTER (CALC 221-004 REV 2)
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.5 E07	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 10 P&ID: M158/G5 Loc Dwg: E315/G5 Elec Scheme: E113/13 VDR ID: NONE Mfr Model Ref: WALKDOWN 10/81 SH 54							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 10 P&ID: M158/C5 Loc Dwg: E315/F5 Elec Scheme: E113/13 VDR ID: NONE Mfr Model Ref: WALKDOWN 10/81 SH 55							

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: PRESSURE SWITCH Manufacturer: PRESSURE CONTROLS Model Number: A-17-1N NUREG 0588 Applicable: NO Accuracy: Demo: 20%	Operating Time	30 DAYS		30 DAYS	001		REF. A	TYPE TEST/ ANALYSIS	SEE NOTE (2)
	Temperature (*F)	SEE GEN NOTE 6		340	001		REF. A	TYPE TEST	SEE NOTE (2)
	Pressure (PSIG)	SEE GEN NOTE 6		65	001		REF. A	TYPE TEST	SEE NOTE (2)
	Relative Humidity (%)	100		100	001		REF. A	TYPE TEST	SEE NOTE (2)
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	001		REF. A,C	TYPE TEST	SEE NOTE (2)
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	4.3 E07		5.0 E07	001		REF. A	TYPE TEST	SEE NOTE (2)
	Aging	40 YEARS		40 YEARS	001		REF. B	TYPE TEST	SEE NOTE (2)
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . WYLE LABORATORIES TEST REPORT NO. 58572 DATED NOV 12, 1980 (CHRON 7314). TEST PROFILE IS SHOWN IN TABLE I, PAGE 13 OF THIS REPORT. B . AGING EVALUATION FORM P381-01 REV. 1, DATED 9/2/83 (CHRON 13247). C . WALKDOWN RESULTS DATED 6/22/83 (CHRON 12242).	1 . REFERENCE A, SECTION 3.6.1 STATES THAT THE LOCA TEST SETUP INCLUDED STEAM, PRESSURE AND HOT WATER SPRAY. THIS IS COMPARABLE IN SEVERITY OR MORE SEVERE THAN DEMINERALIZED WATER. THE DAEC PRESSURE SWITCHES WERE DETERMINED TO NOT BE SUBJECTED TO DIRECT CONTAINMENT SPRAY EFFECTS (BECAUSE OF EXISTING DRYWELL STRUCTURES; SEE REFERENCE C), THEREFORE,

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DOCUMENTATION REFERENCES:	NOTES:
<p>(THIS REFERENCE RESOLVES FRC/NRC COMMENT INDICATED ON TER EQUIPMENT ITEM 60 RELATIVE TO DIRECT EFFECTS OF SPRAY.)</p>	<p>WYLE QUALIFICATION TEST METHOD APPLIES. 2 . THE PRESSURE SWITCH TERMINAL STRIPS ARE NOT QUALIFIED FOR LOCA; SEE ACTION ITEM 40.</p>

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EQ Equip No: P381-01-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PS-4400A Component: PRESSURE SWITCH Manufacturer: PRESSURE CONTROLS Model Number: A-17-1N Purchase Order Number: DCR-1021 Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775'-11"	Operating Time	30 DAYS	
	Temperature (*F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 EO7	
	Aging	40 YEARS	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PS-4400B Component: PRESSURE SWITCH Manufacturer: PRESSURE CONTROLS Model Number: A-17-1N Purchase Order Number: DCR-1021 Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775'-11"	Operating Time	30 DAYS	
	Temperature (*F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 EO7	
	Aging	40 YEARS	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1979 Loc Dwg: M331/C3 Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 12 REV 1							
Environment: HARSH EQ Sys No: 36 P&ID: M114/E4 Elec Scheme: E121/2B VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1979 Loc Dwg: M331/C3 Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 12 REV 1							
Environment: HARSH EQ Sys No: 36 P&ID: M114/E4 Elec Scheme: E121/2B VDR ID: NONE							

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EQ Equip No: P381-01-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PS-4400C Component: PRESSURE SWITCH Manufacturer: PRESSURE CONTROLS Model Number: A-17-1N Purchase Order Number: DCR-1021 Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775' - 11"	Operating Time	30 DAYS	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PS-4401A Component: PRESSURE SWITCH Manufacturer: PRESSURE CONTROLS Model Number: A-17-1N Purchase Order Number: DCR-1021 Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775' - 11"	Operating Time	30 DAYS	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1979 Environment: HARSH EQ Sys No: 36 P&ID: M114/E4 Loc Dwg: M331/C3 Elec Scheme: E121/2B VDR ID: NONE Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 12 REV 1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1979 Environment: HARSH EQ Sys No: 36 P&ID: M114/E4 Loc Dwg: M331/C3 Elec Scheme: E121/2B VDR ID: NONE Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 12 REV 1							

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EQ Equip No: P381-01-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PS-4401B Component: PRESSURE SWITCH Manufacturer: PRESSURE CONTROLS Model Number: A-17-1N Purchase Order Number: DCR-1021 Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775'-11"	Operating Time	30 DAYS	
	Temperature (*F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PS-4401C Component: PRESSURE SWITCH Manufacturer: PRESSURE CONTROLS Model Number: A-17-1N Purchase Order Number: DCR-1021 Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775'-11"	Operating Time	30 DAYS	
	Temperature (*F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1979 Environment: HARSH EQ Sys No: 36 P&ID: M114/E4 Loc Dwg: M331/C3 Elec Scheme: E121/2B VDR ID: NONE Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 12 REV 1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1979 Environment: HARSH EQ Sys No: 36 P&ID: M114/E4 Loc Dwg: M331/C3 Elec Scheme: E121/2B VDR ID: NONE Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 12 REV 1							

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EQ Equip No: P381-01-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PS-4402A Component: PRESSURE SWITCH Manufacturer: PRESSURE CONTROLS Model Number: A-17-1N Purchase Order Number: DCR-1021 Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775'-11" Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PS-4402B Component: PRESSURE SWITCH Manufacturer: PRESSURE CONTROLS Model Number: A-17-1N Purchase Order Number: DCR-1021 Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775'-11" Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1979 Environment: HARSH EQ Sys No: 36 P&ID: M114/C6 Loc Dwg: M331/C4 Elec Scheme: E121/2B VDR ID: NONE Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 12 REV 1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1979 Environment: HARSH EQ Sys No: 36 P&ID: M114/C6 Loc Dwg: M331/C4 Elec Scheme: E121/2B VDR ID: NONE Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 12 REV 1							

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EQ Equip No: P381-01-010

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PS-4402C Component: PRESSURE SWITCH Manufacturer: PRESSURE CONTROLS Model Number: A-17-1N Purchase Order Number: DCR-1021 Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775'-11"	Operating Time	30 DAYS	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 EO7	
	Aging	40 YEARS	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PS-4403A Component: PRESSURE SWITCH Manufacturer: PRESSURE CONTROLS Model Number: A-17-1N Purchase Order Number: DCR-1021 Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775'-11"	Operating Time	30 DAYS	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 EO7	
	Aging	40 YEARS	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1979 Environment: HARSH EQ Sys No: 36 P&ID: M114/C6 Loc Dwg: M331/C3 Elec Scheme: E121/2B VDR ID: NONE Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 12 REV 1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1979 Environment: HARSH EQ Sys No: 36 P&ID: M114/C5 Loc Dwg: M338/C4 Elec Scheme: E121/2B VDR ID: NONE Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 12 REV 1							

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EQ Equip No: P381-01-012

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION	Operating Time	30 DAYS	
Plant I.D. Number: PS-4403B Component: PRESSURE SWITCH	Temperature (*F)	SEE GENERAL NOTE 6	
Manufacturer: PRESSURE CONTROLS	Pressure (PSIG)	SEE GENERAL NOTE 6	
Model Number: A-17-1N	Relative Humidity (%)	100	
Purchase Order Number: DCR-1021	Chemical Spray	DEMIN WATER	
Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION	Seismic	NA	
Accuracy: Spec: NA Location: DRYWELL	Radiation (Rad)	4.3 EO7	
Floor Elevation: 775'-11"	Aging	40 YEARS	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION	Operating Time	30 DAYS	
Plant I.D. Number: PS-4403C Component: PRESSURE SWITCH	Temperature (*F)	SEE GENERAL NOTE 6	
Manufacturer: PRESSURE CONTROLS	Pressure (PSIG)	SEE GENERAL NOTE 6	
Model Number: A-17-1N	Relative Humidity (%)	100	
Purchase Order Number: DCR-1021	Chemical Spray	DEMIN WATER	
Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION	Seismic	NA	
Accuracy: Spec: NA Location: DRYWELL	Radiation (Rad)	4.3 EO7	
Floor Elevation: 775'-11"	Aging	40 YEARS	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	YES	NA

Qual Life Begins: 1979 Environment: HARSH EQ Sys No: 36 P&ID: M114/C5
 Loc Dwg: M338/C4 Elec Scheme: E121/2B VDR ID: NONE
 Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 12 REV 1

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	YES	NA

Qual Life Begins: 1979 Environment: HARSH EQ Sys No: 36 P&ID: M114/C5
 Loc Dwg: M338/C4 Elec Scheme: E121/2B VDR ID: NONE
 Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 12 REV 1

P381-01
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: P381-01-013

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11186-234-NP-1

EQ Equip No: P381-01-014

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PS-4404A Component: PRESSURE SWITCH Manufacturer: PRESSURE CONTROLS Model Number: A-17-1N Purchase Order Number: DCR-1021 Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775'-11" Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PS-4404B Component: PRESSURE SWITCH Manufacturer: PRESSURE CONTROLS Model Number: A-17-1N Purchase Order Number: DCR-1021 Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775'-11" Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1979 Environment: HARSH EQ Sys No: 36 P&ID: M114/C5 Loc Dwg: M338/F4 Elec Scheme: E121/2B VDR ID: NONE Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 12 REV 1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1979 Environment: HARSH EQ Sys No: 36 P&ID: M114/C5 Loc Dwg: M338/F4 Elec Scheme: E121/2B VDR ID: NONE Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 12 REV 1							

P381-01
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: P381-01-015

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 305
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EQ Equip No: P381-01-016

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PS-4404C Component: PRESSURE SWITCH Manufacturer: PRESSURE CONTROLS Model Number: A-17-1N Purchase Order Number: DCR-1021 Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775' - 11"	Operating Time	30 DAYS	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PS-4405A Component: PRESSURE SWITCH Manufacturer: PRESSURE CONTROLS Model Number: A-17-1N Purchase Order Number: DCR-1021 Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775' - 11"	Operating Time	30 DAYS	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1979 Environment: HARSH EQ Sys No: 36 P&ID: M114/C5 Loc Dwg: M338/F4 Elec Scheme: E121/2B VDR ID: NONE Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 12 REV 1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1979 Environment: HARSH EQ Sys No: 36 P&ID: M114/C4 Loc Dwg: M331/F4 Elec Scheme: E121/2B VDR ID: NONE Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 13 REV 1							

P381-01
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: P381-01-017

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EQ Equip No: P381-01-018

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION	Operating Time	30 DAYS	
Plant I.D. Number: PS-4405B Component:	Temperature (*F)	SEE GENERAL NOTE 6	
PRESSURE SWITCH	Pressure (PSIG)	SEE GENERAL NOTE 6	
Manufacturer:	Relative Humidity (%)	100	
PRESSURE CONTROLS	Chemical Spray	DEMIN WATER	
Model Number: A-17-1N	Seismic	NA	
Purchase Order Number: DCR-1021	Radiation (Rad)	4.3 E07	
Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION	Aging	40 YEARS	
Accuracy: Spec: NA Location: DRYWELL	Submergence	NA	
Floor Elevation: 775'-11"			
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION	Operating Time	30 DAYS	
Plant I.D. Number: PS-4405C Component:	Temperature (*F)	SEE GENERAL NOTE 6	
PRESSURE SWITCH	Pressure (PSIG)	SEE GENERAL NOTE 6	
Manufacturer:	Relative Humidity (%)	100	
PRESSURE CONTROLS	Chemical Spray	DEMIN WATER	
Model Number: A-17-1N	Seismic	NA	
Purchase Order Number: DCR-1021	Radiation (Rad)	4.3 E07	
Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION	Aging	40 YEARS	
Accuracy: Spec: NA Location: DRYWELL	Submergence	NA	
Floor Elevation: 775'-11"			
Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1979	Environment: HARSH			EQ Sys No: 36		P&ID: M114/C4	
Loc Dwg: M331/F4	Elec Scheme: E121/2B			VDR ID: NONE			
Mfr Model Ref:	IE PO 33857, DATA SHEET M496, SH 13 REV 1						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: Environment: EQ Sys No: P&ID:							
1979		HARSH		36		M114/C4	
Loc Dwg: M331/F4		Elec Scheme: E121/2B		VDR ID: NONE			
Mfrgr Model Ref: IE PO 33857, DATA SHEET M496, SH 13 REV 1							

P381-01
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: P381-01-019

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 307
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EQ Equip No: P381-01-020

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION	Operating Time	30 DAYS	
Plant I.D. Number: PS-4406A Component:	Temperature (*F)	SEE GENERAL NOTE 6	
PRESSURE SWITCH	Pressure (PSIG)	SEE GENERAL NOTE 6	
Manufacturer:	Relative Humidity (%)	100	
PRESSURE CONTROLS	Chemical Spray	DEMIN WATER	
Model Number: A-17-1N	Seismic	NA	
Purchase Order Number: DCR-1021	Radiation (Rad)	4.3 E07	
Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION	Aging	40 YEARS	
Accuracy: Spec: NA Location: DRYWELL	Submergence	NA	
Floor Elevation: 775' - 11"			
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION	Operating Time	30 DAYS	
Plant I.D. Number: PS-4406B Component:	Temperature (*F)	SEE GENERAL NOTE 6	
PRESSURE SWITCH	Pressure (PSIG)	SEE GENERAL NOTE 6	
Manufacturer:	Relative Humidity (%)	100	
PRESSURE CONTROLS	Chemical Spray	DEMIN WATER	
Model Number: A-17-1N	Seismic	NA	
Purchase Order Number: DCR-1021	Radiation (Rad)	4.3 E07	
Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION	Aging	40 YEARS	
Accuracy: Spec: NA Location: DRYWELL	Submergence	NA	
Floor Elevation: 775' - 11"			
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: Environment: EQ Sys No: P&ID: 1979 HARSH 36 M114/E6 Loc Dwg: M331/F4 Elec Scheme: E121/2C VDR ID: NONE Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 13 REV 1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: Environment: EQ Sys No: P&ID: 1979 HARSH 36 M114/E6 Loc Dwg: M331/F4 Elec Scheme: E121/2C VDR ID: NONE Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 13 REV 1							

P381-01

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: P381-01-021

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EQ Equip No: P381-01-022

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION	Operating Time	30 DAYS	
Plant I.D. Number: PS-4406C Component:	Temperature (°F)	SEE GENERAL NOTE 6	
PRESSURE SWITCH	Pressure (PSIG)	SEE GENERAL NOTE 6	
Manufacturer: PRESSURE CONTROLS	Relative Humidity (%)	100	
Model Number: A-17-1N	Chemical Spray	DEMIN WATER	
Purchase Order Number: DCR-1021	Seismic	NA	
Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION	Radiation (Rad)	4.3 E07	
Accuracy: Spec: NA Location: DRYWELL	Aging	40 YEARS	
Floor Elevation: 775' - 11"	Submergence	NA	
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION	Operating Time	30 DAYS	
Plant I.D. Number: PS-4407A Component:	Temperature (°F)	SEE GENERAL NOTE 6	
PRESSURE SWITCH	Pressure (PSIG)	SEE GENERAL NOTE 6	
Manufacturer: PRESSURE CONTROLS	Relative Humidity (%)	100	
Model Number: A-17-1N	Chemical Spray	DEMIN WATER	
Purchase Order Number: DCR-1021	Seismic	NA	
Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION	Radiation (Rad)	4.3 E07	
Accuracy: Spec: NA Location: DRYWELL	Aging	40 YEARS	
Floor Elevation: 775' - 11"	Submergence	NA	
Flood Level Elevation: 744' - 0" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins:	Environment:		EQ Sys No:		P&ID:		
1979	HARSH		36		M114/E6		
Loc Dwg: M331/F4	Elec Scheme:		E121/2C		VDR ID: NONE		
Mfr Model Ref:	IE PO 33857, DATA SHEET M496, SH 13 REV 1						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	ND	YES	YES	YES	YES	YES	NA
Qual Life Begins: Environment: EQ Sys No: P&ID:							
1979		HARSH		36		M114/E6	
Loc Dwg: M331/F3		Elec Scheme: E121/2C		VDR ID: NONE			
Mfr Model Ref:		IE PO 33857, DATA SHEET M496, SH 13 REV 1					

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: P381-01-023

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EQ Equip No: P381-01-024

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION	Operating Time	30 DAYS	
Plant I.D. Number: PS-4407B Component:	Temperature (*F)	SEE GENERAL NDTE 6	
PRESSURE SWITCH	Pressure (PSIG)	SEE GENERAL NOTE 6	
Manufacturer:	Relative Humidity (%)	100	
PRESSURE CONTROLS	Chemical Spray	DEMIN WATER	
Model Number:	Seismic	NA	
A-17-1N	Radiation (Rad)	4.3 E07	
Purchase Order Number:	Aging	40 YEARS	
DCR-1021	Submergence	NA	
Function/Service:			
POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION			
Accuracy: Spec:			
NA			
Location:			
DRYWELL			
Floor Elevation:			
775'-11"			
Flood Level Elevation: 744'-0"			
Above Flood Level:			
Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: PS-4407C Component: PRESSURE SWITCH Manufacturer: PRESSURE CONTROLS Model Number: A-17-1N Purchase Order Number: DCR-1021 Function/Service: POST ACCIDENT MONITORING/SAFETY RELIEF VALVE POSITION Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 775'-11"	Operating Time	30 DAYS	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
	Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Submergence		NA

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1979 Environment: HARSH EQ Sys No: 36 P&ID: M114/E6 Loc Dwg: M331/F3 Elec Scheme: E121/2C VDR ID: NONE Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 13 REV 1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1979 Environment: HARSH EQ Sys No: 36 P&ID: M114/E6 Loc Dwg: M331/F3 Elec Scheme: E121/2C VDR ID: NONE Mfr Model Ref: IE PO 33857, DATA SHEET M496, SH 13 REV 1							

P427-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: PYCO Model Number: 02-9039-08-6 NUREG 0588 Applicable: NO Accuracy: Demo: USAS C96.1	Operating Time	1 HOUR		30 DAYS	001		REF. B,C	TYPE TEST	NONE
	Temperature (°F)	214		346	001		REF. B,C	TYPE TEST	NONE
	Pressure (PSIG)	1.1		113	001		REF. B,C	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. B,C	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.0 E06		2.0 E08	001		REF. B,C	TYPE TEST	NONE
	Aging	40 YEARS		28 YEARS SEE NOTE (1)	001		REF. A,C	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . AGING EVALUATION FORM P427-01 DATED 7/8/82 (CHRON 8115). B . PYCO QUALIFICATION TEST REPORT 770831, DATED 8/31/77 (CHRON 7229). PRESSURE AND TEMPERATURE PROFILE IS FIGURE 1 OF THIS REPORT. C . SECTION VII.I OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 106.	1 . REPLACE AFTER 28 YEARS UNLESS RESULTS OF NEW QUALIFICATION TEST (FORECAST FDR COMPLETION DURING FOURTH QUARTER 1983) INDICATE EXTENSION OF QUALIFIED LIFE.

P427-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: P427-01-001

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 311
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EQ Equip No: P427-01-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION Plant I.D. Number: TE-2742A Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: PYCO Model Number: 02-9039-08-6 Purchase Order Number: APED Function/Service: PRIMARY CONTAINMENT ISOLATION/RWCU EQUIPMENT ROOM HIGH AMBIENT TEMPERATURE Accuracy: Spec: ASA C96.1 Location: RWCU PUMP ROOM Floor Elevation: 786'-0" Flood Level Elevation: 786'-3" Above Flood Level: Yes: X No:	Operating Time	1 HOUR	THIS INSTRUMENT IS NECI SUPPLIED AND IS GE MODEL NUMBER N145C3224
	Temperature (*F)	214	
	Pressure (PSIG)	1.1	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION Plant I.D. Number: TE-2742B Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: PYCO Model Number: 02-9039-08-6 Purchase Order Number: APED Function/Service: PRIMARY CONTAINMENT ISOLATION/RWCU EQUIPMENT ROOM HIGH AMBIENT TEMPERATURE Accuracy: Spec: ASA C96.1 Location: RWCU PUMP ROOM Floor Elevation: 786'-0" Flood Level Elevation: 786'-3" Above Flood Level: Yes: X No:	Operating Time	1 HOUR	THIS INSTRUMENT IS NECI SUPPLIED AND IS GE MODEL NUMBER N145C3224
	Temperature (*F)	214	
	Pressure (PSIG)	1.1	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	NO	YES	NA
Qual Life Begins: 1974 Loc Dwg: M657/E4 Mfr Model Ref: V.P. APED G31-22-4, SH 4, QSR-110-A-01							
Environment: HARSH Elec Scheme: E124/7 VDR ID: G31-NO16A							
EQ Sys No: 27 P&ID: M127/A8							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	NO	YES	NA
Qual Life Begins: 1974 Loc Dwg: M657/E3 Mfr Model Ref: V.P. APED G31-22-4, SH 4, QSR-110-A-01							
Environment: HARSH Elec Scheme: E124/7 VDR ID: G31-NO16B							
EQ Sys No: 27 P&ID: M127/A8							

P427-01
 Owner: IDWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: P427-01-003

EQUIPMENT QUALIFICATION REPORT DATA SHEET

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 Date: 09/22/83

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EQ Equip No: P427-01-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION Plant I.D. Number: TE-2742C Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: PYCO Model Number: 02-9039-08-6 Purchase Order Number: APED Function/Service: PRIMARY CONTAINMENT ISOLATION/RWCU EQUIPMENT ROOM HIGH AMBIENT TEMPERATURE Accuracy: Spec: ASA C96.1 Location: RWCU HEAT EXCH ROOM Floor Elevation: 786'-0" Flood Level Elevation: 786'-7" Above Flood Level: Yes: X No:	Operating Time	1 HOUR	THIS INSTRUMENT IS NECI SUPPLIED AND IS GE MODEL NUMBER N145C3224
	Temperature (°F)	214	
	Pressure (PSIG)	1.1	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION Plant I.D. Number: TE-2742D Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: PYCO Model Number: 02-9039-08-6 Purchase Order Number: APED Function/Service: PRIMARY CONTAINMENT ISOLATION/RWCU EQUIPMENT ROOM HIGH AMBIENT TEMPERATURE Accuracy: Spec: ASA C96.1 Location: RWCU HEAT EXCH ROOM Floor Elevation: 786'-0" Flood Level Elevation: 786'-7" Above Flood Level: Yes: X No:	Operating Time	1 HOUR	THIS INSTRUMENT IS NECI SUPPLIED AND IS GE MODEL NUMBER N145C3224
	Temperature (°F)	214	
	Pressure (PSIG)	1.1	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	NO	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M127/A8 Loc Dwg: M657/E4 Elec Scheme: E124/7 VDR ID: G31-NO16C Mfr Model Ref: V.P. APED G31-22-4, SH 4, QSR-110-A-01							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	NO	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M127/A8 Loc Dwg: M657/E6 Elec Scheme: E124/7 VDR ID: G31-NO16D Mfr Model Ref: V.P. APED G31-22-4, SH 4, QSR-110-A-01							

P427-01

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: P427-01-005

EQUIPMENT QUALIFICATION REPORT
DATA SHEET

Sheet No. 313

Revision: 2

Date: 09/22/83

11186-234-NP-1

EQ Equip No: P427-01-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	THIS INSTRUMENT IS NECI SUPPLIED AND IS GE MODEL NUMBER N145C3224
Plant I.D. Number: TE-2742E Component:	Temperature (°F)	214	
TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer:	Pressure (PSIG)	1.1	
PYCO	Relative Humidity (%)	100	
Model Number: 02-9039-08-6	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RWCU EQUIPMENT ROOM HIGH AMBIENT TEMPERATURE Accuracy: Spec:	Radiation (Rad)	1.0 E06	
ASA C96.1 Location: RWCU HEAT EXCH ROOM	Aging	40 YEARS	
Floor Elevation: 786'-0"	Submergence	NA	
Flood Level Elevation: 786'-7" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	THIS INSTRUMENT IS NECI SUPPLIED AND IS GE MODEL NUMBER N145C3224
Plant I.D. Number: TE-2742F Component:	Temperature (°F)	214	
TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer:	Pressure (PSIG)	1.1	
PYCO	Relative Humidity (%)	100	
Model Number: 02-9039-08-6	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RWCU EQUIPMENT ROOM HIGH AMBIENT TEMPERATURE Accuracy: Spec:	Radiation (Rad)	1.0 E06	
ASA C96.1 Location: RWCU HEAT EXCH ROOM	Aging	40 YEARS	
Floor Elevation: 786'-0"	Submergence	NA	
Flood Level Elevation: 786'-7" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	NO	YES	NA
Qual Life Begins:	Environment:			EQ Sys No:		P&ID:	
1974	HARSH			27		M127/A8	
Loc Dwg: E657/F6	Elec Scheme: E124/7			VDR ID: G31-NO16E			
Mfr Model Ref:	V.P. APED G31-22-4, SH 4, QSR-110-A-01						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	NO	YES	NA
Qual Life Begins:	Environment:		EQ Sys No:		P&ID:		
1974	HARSH		27		M127/A8		
Loc Dwg: M657/E5	Elec Scheme: E124/7		VDR ID: G31-NO16F				
Mfr Model Ref:	V.P. APED G31-22-4, SH 4, QSR-110-A-01						

P427-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: P427-01-007

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 314
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 Date: 09/22/83

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EQ Equip No: P427-01-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	THIS INSTRUMENT IS NECI
Plant I.D. Number: TE-2743B Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: PYCO	Temperature (°F)	214	SUPPLIED AND IS GE
Model Number: 02-9039-08-6	Pressure (PSIG)	1.1	MODEL NUMBER N145C3224
Purchase Order Number: APED	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RWCU ROOM AIR VENT INLET HIGH TEMPERATURE	Chemical Spray	NA	
Accuracy: Spec: ASA C96.1 Location: RWCU PUMP ROOM	Seismic	NA	
Floor Elevation: 786'-0"	Radiation (Rad)	1.0 EO6	
	Aging	40 YEARS	
Flood Level Elevation: 786'-3" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	THIS INSTRUMENT IS NECI
Plant I.D. Number: TE-2743C Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: PYCO	Temperature (°F)	214	SUPPLIED AND IS GE
Model Number: 02-9039-08-6	Pressure (PSIG)	1.1	MODEL NUMBER N145C3224
Purchase Order Number: APED	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RWCU ROOM AIR VENT INLET HIGH TEMPERATURE	Chemical Spray	NA	
Accuracy: Spec: ASA C96.1 Location: RWCU PUMP ROOM	Seismic	NA	
Floor Elevation: 786'-0"	Radiation (Rad)	1.0 EO6	
	Aging	40 YEARS	
Flood Level Elevation: 786'-3" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	NO	YES	NA

Qual Life Begins: 1974
 Environment: HARSH
 EQ Sys No: 27
 P&ID: M127/A8
 Loc Dwg: M657/E3
 Elec Scheme: E124/6
 VDR ID: G31-NO22B
 Mfr Model Ref: V.P. APED G31-22-4, SH 5, QSR-110-A-01

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	NO	YES	NA

Qual Life Begins: 1974
 Environment: HARSH
 EQ Sys No: 27
 P&ID: M127/A8
 Loc Dwg: M657/E4
 Elec Scheme: E124/6
 VDR ID: G31-NO22C
 Mfr Model Ref: V.P. APED G31-22-4, SH 5, QSR-110-A-01

P427-01
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: P427-01-009

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 315
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 Date: 09/22/83

11186-234-NP-1

EQ Equip No: P427-01-010

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	THIS INSTRUMENT IS NECI SUPPLIED AND IS GE MODEL NUMBER N145C3224
Plant I.D. Number: TE-2743D Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: PYCO	Temperature (°F)	214	
Model Number: 02-9039-08-6	Pressure (PSIG)	1.1	
Purchase Order Number: APED	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RWCU ROOM AIR VENT INLET HIGH TEMPERATURE	Chemical Spray	NA	
Accuracy: Spec: ASA C96.1 Location: RWCU HEAT EXCH ROOM	Seismic	NA	
Floor Elevation: 786'-0"	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
Flood Level Elevation: 786'-7" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	THIS INSTRUMENT IS NECI SUPPLIED AND IS GE MODEL NUMBER N145C3224
Plant I.D. Number: TE-2743E Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: PYCO	Temperature (°F)	214	
Model Number: 02-9039-08-6	Pressure (PSIG)	1.1	
Purchase Order Number: APED	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RWCU ROOM AIR VENT INLET HIGH TEMPERATURE	Chemical Spray	NA	
Accuracy: Spec: ASA C96.1 Location: RWCU HEAT EXCH ROOM	Seismic	NA	
Floor Elevation: 786'-0"	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
Flood Level Elevation: 786'-7" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	NO	YES	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 27		P&ID: M127/A8	
Loc Dwg: M657/F6		Elec Scheme: E124/6		VDR ID: G31-NO22D			
Mfgr Model Ref: V.P. APED G31-22-4, SH 5, QSR-110-A-01							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	NO	YES	NA
Qual Life Begins: 1974	Environment: HARSH		EQ Sys No: 27		P&ID: M127/A8		
Loc Dwg: M657/E6	Elec Scheme: E124/6		VDR ID: G31-NO22E				
Mfgr Model Ref:	V.P. APED G31-22-4, SH 5, QSR-110-A-01						

P427-01
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: P427-01-011

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EQ Equip No: P427-01-012

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION Plant I.D. Number: TE-2743F Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: PYCO Model Number: 02-9039-08-6 Purchase Order Number: APED Function/Service: PRIMARY CONTAINMENT ISOLATION/RWCU ROOM AIR VENT INLET HIGH TEMPERATURE Accuracy: Spec: ASA C96.1 Location: RWCU HEAT EXCH ROOM Floor Elevation: 786'-0"	Operating Time	1 HOUR	THIS INSTRUMENT IS NECI SUPPLIED AND IS GE MODEL NUMBER N145C3224
	Temperature (*F)	214	
	Pressure (PSIG)	1.1	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
	Submergence	NA	
	Flood Level Elevation: 786'-7" Above Flood Level: Yes: X No:		

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION Plant I.D. Number: TE-2744A Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: PYCO Model Number: 02-9039-08-6 Purchase Order Number: APED Function/Service: PRIMARY CONTAINMENT ISOLATION/RWCU ROOM AIR VENT OUTLET HIGH TEMPERATURE Accuracy: Spec: ASA C96.1 Location: RWCU PUMP ROOM Floor Elevation: 786'-0"	Operating Time	1 HOUR	THIS INSTRUMENT IS NECI SUPPLIED AND IS GE MODEL NUMBER N145C3224
	Temperature (*F)	214	
	Pressure (PSIG)	1.1	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
	Submergence	NA	
	Flood Level Elevation: 786'-3" Above Flood Level: Yes: X No:		

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	NO	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M127/A8 Loc Dwg: M657/E5 Elec Scheme: E124/6 VDR ID: G31-NO22F Mfr Model Ref: V.P. APED G31-22-4,SH 5,QSR-110-A-01							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	NO	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M127/A8 Loc Dwg: M657/F4 Elec Scheme: E124/6 VDR ID: G31-NO23A Mfr Model Ref: V.P. APED G31-22-4,SH 5,QSR-110-A-01							

P427-01
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: P427-01-013

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 317
 Revision: 2
 Date: 09/22/83

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EQ Equip No: P427-01-014

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION Plant I.D. Number: TE-2744B Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: PYCO Model Number: 02-9039-08-6 Purchase Order Number: APED Function/Service: PRIMARY CONTAINMENT ISOLATION/RWCU ROOM AIR VENT OUTLET HIGH TEMPERATURE Accuracy: Spec: ASA C96.1 Location: RWCU PUMP ROOM Floor Elevation: 786'-0"	Operating Time	1 HOUR	THIS INSTRUMENT IS NECI SUPPLIED AND IS GE MODEL NUMBER N145C3224
	Temperature (*F)	214	
	Pressure (PSIG)	1.1	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
	Submergence	NA	
	Flood Level Elevation: 786'-3" Above Flood Level: Yes: X No:		

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION Plant I.D. Number: TE-2744C Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: PYCO Model Number: 02-9039-08-6 Purchase Order Number: APED Function/Service: PRIMARY CONTAINMENT ISOLATION/RWCU ROOM AIR VENT OUTLET HIGH TEMPERATURE Accuracy: Spec: ASA C96.1 Location: RWCU PUMP ROOM Floor Elevation: 786'-0"	Operating Time	1 HOUR	THIS INSTRUMENT IS NECI SUPPLIED AND IS GE MODEL NUMBER N145C3224
	Temperature (*F)	214	
	Pressure (PSIG)	1.1	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
	Submergence	NA	
	Flood Level Elevation: 786'-3" Above Flood Level: Yes: X No:		

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	NO	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M127/A8 Loc Dwg: M657/F4 Elec Scheme: E124/6 VDR ID: G31-NO23B Mfr Model Ref: V.P. APED G31-22-4, SH 5, QSR-110-A-01							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	NO	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M127/A8 Loc Dwg: M657/E4 Elec Scheme: E124/6 VDR ID: G31-NO23C Mfr Model Ref: V.P. APED G31-22-4, SH 5, QSR-110-A-01							

P427-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: P427-01-015

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EQ Equip No: P427-01-016

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	THIS INSTRUMENT IS NECI
Plant I.D. Number: TE-2744D Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: PYCO	Temperature (°F)	214	SUPPLIED AND IS GE
Model Number: 02-9039-08-6	Pressure (PSIG)	1.1	MODEL NUMBER N145C3224
Purchase Order Number: APED	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RWCU ROOM AIR VENT OUTLET HIGH TEMPERATURE	Chemical Spray	NA	
Accuracy: Spec: ASA C96.1 Location: RWCU HEAT EXCH ROOM	Seismic	NA	
Floor Elevation: 786' -0"	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
Flood Level Elevation: 786' -7" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	THIS INSTRUMENT IS NECI
Plant I.D. Number: TE-2744E Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: PYCO	Temperature (°F)	214	SUPPLIED AND IS GE
Model Number: 02-9039-08-6	Pressure (PSIG)	1.1	MODEL NUMBER N145C3224
Purchase Order Number: APED	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RWCU ROOM AIR VENT OUTLET HIGH TEMPERATURE	Chemical Spray	NA	
Accuracy: Spec: ASA C96.1 Location: RWCU HEAT EXCH ROOM	Seismic	NA	
Floor Elevation: 786' -0"	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
Flood Level Elevation: 786' -7" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	NO	YES	NA

Qual Life Begins: 1974
 Environment: HARSH
 EQ Sys No: 27
 P&ID: M127/A8
 Loc Dwg: M657/E4
 Elec Scheme: E124/6
 VDR ID: G31-NO23D
 Mfr Model Ref: V.P. APED G31-22-4, SH 5, QSR-110-A-01

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	NO	YES	NA

Qual Life Begins: 1974
 Environment: HARSH
 EQ Sys No: 27
 P&ID: M127/A8
 Loc Dwg: M657/E4
 Elec Scheme: E124/6
 VDR ID: G31-NO23E
 Mfr Model Ref: V.P. APED G31-22-4, SH 5, QSR-110-A-01

P427-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: P427-01-017

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 319
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 Date: 09/22/83

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EQ Equip No: P427-01-018

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	THIS INSTRUMENT IS NECI SUPPLIED AND IS GE MODEL NUMBER N145C3224
Plant I.D. Number: TE-2744F Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: PYCO	Temperature (°F)	214	
Model Number: 02-9039-08-6	Pressure (PSIG)	1.1	
Purchase Order Number: APED	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RWCU ROOM AIR VENT OUTLET HIGH TEMPERATURE	Chemical Spray	NA	
Accuracy: Spec: ASA C96.1 Location: RWCU HEAT EXCH ROOM	Seismic	NA	
Floor Elevation: 786'-0"	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
Flood Level Elevation: 786'-7" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	THIS INSTRUMENT IS NECI SUPPLIED AND IS GE MODEL NUMBER N145C3224
Plant I.D. Number: TE-2743A Component: TEMPERATURE ELEMENT (THERMOCOUPLE) Manufacturer: PYCO	Temperature (°F)	214	
Model Number: 02-9039-08-6	Pressure (PSIG)	1.1	
Purchase Order Number: APED	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/RWCU ROOM AIR VENT INLET HIGH TEMPERATURE	Chemical Spray	NA	
Accuracy: Spec: ASA C96.1 Location: RWCU PUMP ROOM	Seismic	NA	
Floor Elevation: 786'-0"	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
Flood Level Elevation: 786'-3" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	NO	YES	NA
Qual Life Begins: 1974	Environment: HARSH		EQ Sys No: 27		P&ID: M127/A8		
Loc Dwg: M657/F5	Elec Scheme: E124/6		VDR ID: G31-NO23F				
Mfr Model Ref:	V. P. APED G31-22-4, SH 5, QSR-110-A-01						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	NO	NO	NO	NO	YES	NA
Qual Life Begins: 1974	Environment: HARSH		EQ Sys No: 27		P&ID: M127/A8		
Loc Dwg: M657/D4	Elec Scheme: E 124/6		VDR ID: G31-NO22A				
Mfr Model Ref:	V.P. APED G31-22-4, SH 5, QSR-110-A-01						

R098-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

Sheet No: 320
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 Date: 09/22/83

11186-234-NP-1

EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: 600V CABLE Manufacturer: RAYCHEM Model Number: NA NUREG 0588 Applicable: NO Accuracy: Demo:	Operating Time	30 DAYS		30 DAYS	001		REF. A,C	TYPE TEST	NONE
	Temperature (°F)	SEE GEN NOTE 6		357	001		REF. A,C	TYPE TEST	NONE
	Pressure (PSIG)	SEE GEN NOTE 6		70	001		REF. A,C	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A,C	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	001		REF. A,C	TYPE TEST	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.6 E08		2.0 E08 SEE NOTE (2)	001		REF. A,C	TYPE TEST	NONE
	Aging	40 YEARS		40 SEE NOTE (3)	001		REF. B,C	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . THE FRANKLIN INSTITUTE RESEARCH LABDRATORIES TECHNICAL REPORT NO. F-C4033-1 DATED JANUARY 1975 (CHRON 7511). TEMPERATURE AND PRESSURE PROFILE IS PAGE 6 OF THIS REPORT. B . AGING EVALUATION FORM R098-01 REV. 1, DATED 9/9/83 (CHRON 13326). C . SECTION VII.K OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC	1 . SPRAY SOLUTION OF H3BO3 AND NA2S2O3 AND NAOH IN TAP WATER USED IN TEST EXCEEDS REQUIREMENT OF DEMINERALIZED WATER SPRAY. 2 . TEST MODEL WAS IRRADIATED WITH 50 MRADS DURING AGING AND 150 MRADS DURING LOCA SIMULATION TEST. TOTAL IRRADIATION IS 200 MRADS.

RO98-01

Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
Docket: 50-331

EQUIPMENT QUALIFICATION REPORT

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11186-234-NP-1

DOCUMENTATION REFERENCES:	NOTES:
<p>COMMENTS ON TER EQUIPMENT ITEM 108.</p>	<p>3 . QUALIFIED LIFE OF 40 YEARS ASSUMES CONTINUOUS AMBIENT TEMPERATURE OF LESS THAN 180F.</p>

R098-01
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: R098-01-001

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 322
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 Date: 09/22/83

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	RAD DOSE IS FROM SGT ROOM (HIGHEST RAD DOSE AREA)
Plant I.D. Number: CABLE-COAX-RAY Component: 600V CABLE	Temperature (°F)	SEE GEN NOTE 6	
Manufacturer: RAYCHEM	Pressure (PSIG)	SEE GEN NOTE 6	
Model Number: NA	Relative Humidity (%)	100	
Purchase Order Number: E-O23A	Chemical Spray	DEMIN WATER	
Function/Service: SUPPORT/SUPPLIES INSTRUMENTATION SIGNALS	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	1.6 E08	
Location: VARIOUS	Aging	40 YEARS	
Floor Elevation: VARIOUS	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (°F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:	Submergence		
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 32 P&ID: NA Loc Dwg: NA Elec Scheme: NA VDR ID: NONE Mfgr Model Ref: P.O. E-O23A,REV.2							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins: Environment: EQ Sys No: P&ID: Loc Dwg: Elec Scheme: VDR ID: Mfgr Model Ref:							

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SPLICING KITS Manufacturer: RAYCHEM Model Number: WCSF-N NUREG 0588 Applicable: NO Accuracy: Demo:	Operating Time	30 DAYS		30 DAYS	001		REF. A	TYPE TEST	NONE SEE NOTE (3)
	Temperature (°F)	SEE GEN NOTE 6		351	001		REF. A	TYPE TEST	NONE
	Pressure (PSIG)	SEE GEN NOTE 6		70	001		REF. A	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	001		REF. A	TYPE TEST	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.6 E08		2.0 E08 SEE NOTE (2)	001		REF. A	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS	001		REF. B	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . THE FRANKLIN INSTITUTE RESEARCH LABORATORIES TECHNICAL REPORT NO. F-C4033-3 DATED JANUARY, 1975 (CHRON 7774). TEMPERATURE AND PRESSURE PROFILE IS PAGE 6 OF THIS REPORT. B . AGING EVALUATION FORM R098-02 DATED 6/18/82 (CHRON 8116).	1 . SPRAY SOLUTION OF H3BO3 AND N2S2O3 AND NAOH IN TAP WATER USED IN TEST EXCEEDS REQUIREMENT OF DEMINERALIZED WATER SPRAY. 2 . TEST MODEL WAS IRRADIATED WITH 50 MRADS DURING AGING AND 150 MRADS DURING LOCA SIMULATION TEST. TOTAL IRRADIATION IS 200 MRADS.

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DOCUMENTATION REFERENCES:	NOTES:
	<p>3 . THIS EQUIPMENT WAS REVIEWED IN FRC TER C5257-499 DATED 8/18/82 AND CLASSIFIED AS CATEGORY I.A (EQUIPMENT QUALIFIED).</p>

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	RAD DOSE IS FROM SGTS ROOM
Plant I.D. Number: SPlicing KITS Component: SPlicing KITS	Temperature (*F)	SEE GEN NOTE 6	
Manufacturer: RAYCHEM	Pressure (PSIG)	SEE GEN NOTE 6	
Model Number: WCSF-N	Relative Humidity (%)	100	
Purchase Order Number: E-054	Chemical Spray	DEMIN WATER	
Function/Service: SUPPORT/CABLE CONNECTIONS	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	1.6 E08	
Location: VARIOUS	Aging	40 YEARS	
Floor Elevation: VARIOUS			
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (*F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:			
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:	Submergence		

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1979 Environment: HARSH EQ Sys No: 32 P&ID: NA Loc Dwg: NA Elec Scheme: NA VDR ID: NONE Mfr Model Ref: DCR-777 & LTR FROM J. KUSTER (CHRON 7776)							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins: Environment: EQ Sys No: P&ID: Loc Dwg: Elec Scheme: VDR ID: Mfr Model Ref:							

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: 600V CABLE Manufacturer: ROCKBESTOS Model Number: FIREWALL III, EP NUREG 0588 Applicable: YES Accuracy: Demo: NA	Operating Time	30 DAYS		365 DAYS	001		REF. A,B, C,E	TYPE TEST	NONE
	Temperature (°F)	SEE GENERAL NOTE 6		346	001		REF. A,B, C,E	TYPE TEST	NONE
	Pressure (PSIG)	SEE GENERAL NOTE 6		113	001		REF. A,B, C,E	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A,B, C,E	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	001		REF. A,B C,E	TYPE TEST	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.6 E08		2.0 E08	001		REF. A,B C,E	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NDTE (2)	001		REF. D,E	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	---

DOCUMENTATION REFERENCES	NOTES
A . QUALIFICATION OF FIREWALL III CLASS 1E ELECTRIC CABLES (CHEMICALLY CROSS LINKED INSULATION) QR #1807, REV. 3 DATED 12/28/80 (CHRON 7911). TEST PROFILE IS PAGE 8 OF THIS REPORT. B . QUALIFICATION OF FIRE WALL III CLASS 1E ELECTRIC CABLES (IRRADIATION CROSS LINKED INSULATION) QR #1806, REV. 3	1. REPRESENTATIVE CABLE SAMPLES WERE SUBJECTED TO SPRAY AT A RATE OF 0.15 GPM PER SQUARE FOOT OF SPRAY AREA WITH SOLUTION OF 0.28 MOLAR BORIC ACID (3000 PPM BORON) AND SODIUM HYDROXIDE TO ADJUST PH BETWEEN 9-11 AT 77F. THIS IS MORE SEVERE THAN DEMINERALIZED WATER SPRAY. 2 . QUALIFIED LIFE OF 40 YEARS ASSUMES CONTINUOUS AMBIENT

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DOCUMENTATION REFERENCES:	NOTES:
<p>DATED 5/1/81 (CHRON 7912). TEST PROFILE IS PAGE 8 OF THIS REPORT.</p> <p>C . QUALIFICATION OF FIREWALL EP CLASS 1E ELECTRIC CABLES QR #1804 DATED 4/6/81 (CHRON 7913). TEST PROFILE IS PAGE 4 OF THIS REPORT.</p> <p>D . AGING EVALUATION FORM R352-01 REV. 1, DATED 9/15/83 (CHRON 13378).</p> <p>E . SECTION VII.K OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 111 AND 114.</p>	<p>TEMPERATURE OF LESS THAN 180F.</p>

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EQ Equip No: R352-01-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS Plant I.D. Number: CABLE-POWER-ROC Component: 600V CABLE Manufacturer: ROCKBESTOS Model Number: FIREWALL III, EP Purchase Order Number: 46201, 52796 Function/Service: SUPPORT/SUPPLY POWER Accuracy: Spec: NA Location: VARIOUS Floor Elevation: VARIOUS Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	RAD DOSE IS FROM SGT ROOM (HIGHEST RAD DOSE AREA)
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	1.6 E08	
	Aging	40 YEARS	
Flood Level	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS Plant I.D. Number: CABLE-CONTRDL-ROC Component: 600V CABLE Manufacturer: ROCKBESTOS Model Number: FIREWALL III, EP Purchase Order Number: 46201, 52796 Function/Service: SUPPORT/TRANSMIT CONTROL SIGNAL Accuracy: Spec: NA Location: VARIDUS Floor Elevation: VARIOUS Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	RAD DOSE IS FROM SGT ROOM (HIGHEST RAD DOSE AREA)
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	1.6 E08	
	Aging	40 YEARS	
Flood Level	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Loc Dwg: NA Mfgr Model Ref: IE PO 46201, 52796 Environment: HARSH Elec Scheme: NA EO Sys No: 32 P&ID: NA VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981 Loc Dwg: NA Mfgr Model Ref: IE PO 46201, 52796 Environment: HARSH Elec Scheme: NA EQ Sys No: 32 P&ID: NA VDR ID: NONE							

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	RAD DOSE IS FROM SGT ROOM (HIGHEST RAD DOSE AREA)
Plant I.D. Number: CABLE-INSTR-ROC Component: 600V CABLE	Temperature (°F)	SEE GENERAL NOTE 6	
Manufacturer: ROCKBESTOS	Pressure (PSIG)	SEE GENERAL NOTE 6	
Model Number: FIREWALL III, EP	Relative Humidity (%)	100	
Purchase Order Number: 46201, 52796	Chemical Spray	DEMIN WATER	
Function/Service: SUPPORT/TRANSMIT INSTRUMENT SIGNAL	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	1.6 E08	
Location: VARIOUS	Aging	40 YEARS	
Floor Elevation: VARIOUS	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (°F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:	Submergence		
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981	Environment: HARSH	EQ Sys No: 32	P&ID: NA				
Loc Dwg: NA	Elec Scheme: NA	VDR ID: NONE					
Mfgr Model Ref: IE PO 46201, 52796							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins:	Environment:	EQ Sys No:	P&ID:				
Loc Dwg:	Elec Scheme:	VDR ID:					
Mfgr Model Ref:							

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: 600V CABLE Manufacturer: ROCKBESTOS Model Number: RSS-6-104, 109 CELLULAR DIELECTRIC NUREG 0588 Applicable: YES Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A, D	TYPE TEST	NONE
	Temperature (°F)	90		SEE NOTE (1)	001		REF. A, B, D	TYPE TEST	NONE
	Pressure (PSIG)	0		104	001		REF. A, D	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A, D	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	4.7 E05		2.0 E08	001		REF. A, D	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (2)	001		REF. C, D	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT ON QUALIFICATION TESTS FOR SECOND GENERATION SOLID DIELECTRIC COAXIAL CONSTRUCTIONS AND CELLULAR DIELECTRIC COAXIAL CONSTRUCTIONS FOR CLASS 1E SERVICE IN NUCLEAR GENERATING STATIONS, PART 2, REPORT #2806 (CHRON 7955). TEST PROFILE IS ON PAGE 15 OF THIS REPORT. B . NSAC/INPO SIGNIFICANT EVENT REPORT, ROCKBESTOS COAXIAL	1. REPRESENTATIVE CABLE SAMPLE WAS TESTED TO 340F BY REFERENCE A; BUT CABLE TYPE IS LIMITED TO 230F BY REFERENCE B. 2 . QUALIFIED LIFE OF 40 YEARS ASSUMES CONTINUOUS AMBIENT TEMPERATURE OF LESS THAN 180F.

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DOCUMENTATION REFERENCES:	NOTES:
<p>CABLE (RSS-6-100 TO RSS-6-112) DATED 2/8/82 (CHRON 6462).</p> <p>C . AGING EVALUATION FORM R352-02 REV. 1, DATED 9/15/83 (CHRON 13379).</p> <p>D . SECTION VII.K OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 111 AND 114.</p> <p>(REFERENCES SUMMARIZED IN SECTION IX.E OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEM 113.)</p>	

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	
Plant I.D. Number: CABLE-COAX1-ROC Component: 600V CABLE	Temperature (°F)	90	
Manufacturer: ROCKBESTOS	Pressure (PSIG)	0	
Model Number: RSS-6-104, 109 CELLULAR DIELECTRIC Purchase Order Number: 57028	Relative Humidity (%)	100	
Function/Service: SUPPORT/TRANSMIT INSTRUMENT SIGNAL	Chemical Spray	NA	
	Seismic	NA	
Accuracy: Spec: NA Location: RB-S	Radiation (Rad)	4.7 E05	
Floor Elevation: 757' -6"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (°F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec: Location:	Aging		
Floor Elevation:	Submergence		
Flood Level Elevation: Above Flood Level: Yes: No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1982	Environment: HARSH	EQ Sys No: 32	P&ID: NA				
Loc Dwg: NA	Elec Scheme: NA	VDR ID: NONE					
Mfgr Model Ref: CHRON 8022, 4634							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins:	Environment:	EQ Sys No:	P&ID:				
Loc Dwg:	Elec Scheme:	VDR ID:					
Mfgr Model Ref:							

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: 600V CABLE Manufacturer: ROCKBESTOS Model Number: RSS-6-104 SOLID DIELECTRIC NUREG 0588 Applicable: YES Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A,C	TYPE TEST	NONE
	Temperature (°F)	SEE GENERAL NOTE 6		346	001		REF. A,C	TYPE TEST	NONE
	Pressure (PSIG)	SEE GENERAL NOTE 6		113	001		REF. A,C	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A,C	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	001		REF. A,C	TYPE TEST	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.6 E08		2.0 E08	001		REF. A,C	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (2)	001		REF. B,C	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . REPORT ON QUALIFICATION TESTS FOR SECOND GENERATION SOLID DIELECTRIC COAXIAL CONSTRUCTIONS AND CELLULAR DIELECTRIC COAXIAL CONSTRUCTIONS FOR CLASS 1E SERVICE IN NUCLEAR GENERATING STATIONS. REPORT #2806 (CHRON 7955). TEST PROFILE IS APPENDIX IV OF THIS REPORT. B . AGING EVALUATION FORM R352-03 REV. 1, DATED 9/15/83	1. TEST MODEL WAS CONTINUOUSLY SPRAYED AT A RATE OF 0.15 GPM PER SQUARE FOOT OF SPRAY AREA WITH A SOLUTION OF 0.28 MOLAR BORIC ACID (3000 PPM BDRON) AND SODIUM HYDROXIDE TO ADJUST PH BETWEEN 9-11 AT 77F. THIS IS MORE SEVERE THAN DEMINERALIZED WATER SPRAY. 2 . QUALIFIED LIFE OF 40 YEARS ASSUMES CONTINUOUS AMBIENT

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DOCUMENTATION REFERENCES:	NOTES:
<p>(CHRON 13377).</p> <p>C . SECTION VII.K OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 111 AND 114.</p>	<p>TEMPERATURE OF LESS THAN 180F.</p>

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 Facility: DUANE ARNOLD
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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	RAD DISE IS FRDM SGT ROOM (HIGHEST RAD DOSE AREA)
Plant I.D. Number: CABLE-COAX2-ROC Component: 600V CABLE	Temperature (*F)	SEE GENERAL NOTE 6	
Manufacturer: ROCKBESTOS	Pressure (PSIG)	SEE GENERAL NOTE 6	
Model Number: RSS-6-104 SOLID DIELECTRIC Purchase Order Number: 46201	Relative Humidity (%)	100	
Function/Service: SUPPORT/TRANSMIT INSTRUMENT SIGNAL	Chemical Spray	DEMIN WATER	
	Seismic	NA	
Accuracy: Spec: NA Location: VARIOUS	Radiation (Rad)	1.6 E08	
Floor Elevation: VARIOUS	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (*F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
	Aging		
Accuracy: Spec:			
Location:			
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:	Submergence		

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1981	Environment: HARSH	EQ Sys No: 32	P&ID: NA				
Loc Dwg: NA	Elec Scheme: NA	VDR ID: NONE					
Mfgr Model Ref: IE PO 46201							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins:	Environment:	EQ Sys No:	P&ID:				
Loc Dwg:	Elec Scheme:	VDR ID:					
Mfgr Model Ref:							

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	Parameter	Required		Qualification	Reqd.		Qual.		
Component: TEMPERATURE ELEMENT (RTD) Manufacturer: ROSEMOUNT Model Number: 104MA23ABBB NUREG 0588 Applicable: NO Accuracy: Demo: NONE	Operating Time	1 HOUR		SEE NOTE (1)	001		---	---	NONE
	Temperature (°F)	300		SEE NOTE (1)	001		---	---	NONE
	Pressure (PSIG)	1.8		SEE NOTE (1)	001		---	---	NONE
	Relative Humidity (%)	100		SEE NOTE (1)	001		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	7.2 E06		SEE NOTE (1)	001		---	---	NONE
	Aging	40 YEARS		SEE NOTE (1)	001		---	---	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
	1. SEE ACTION ITEM 29.

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EQ Equip No: R369-01-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4443A Component: TEMPERATURE ELEMENT (RTD) Manufacturer: ROSEMOUNT	Temperature (*F)	300	
Model Number: 104MA23ABBB	Pressure (PSIG)	1.8	
Purchase Order Number: M-170	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM TUNNEL A HIGH TEMPERATURE ZONE 1 Accuracy: Spec:	Chemical Spray	NA	
NA Location: STEAM TUNNEL	Seismic	NA	
Floor Elevation: 757' -6"	Radiation (Rad)	7.2 E06	
	Aging	40 YEARS	
Flood Level Elevation: 760' -0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4443B Component: TEMPERATURE ELEMENT (RTD) Manufacturer: ROSEMOUNT	Temperature (*F)	300	
Model Number: 104MA23ABBB	Pressure (PSIG)	1.8	
Purchase Order Number: M-170	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM TUNNEL A HIGH TEMPERATURE ZONE 2 Accuracy: Spec:	Chemical Spray	NA	
NA Location: STEAM TUNNEL	Seismic	NA	
Floor Elevation: 757' -6"	Radiation (Rad)	7.2 E06	
	Aging	40 YEARS	
Flood Level Elevation: 760' -0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA

Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 27	P&ID: M114/H2
Loc Dwg: E328/D3	Elec Scheme: E122/9	VDR ID: NONE	
Mfr Model Ref: CHRON 1474, 1572, & 1700/DATA SHEET M435			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA

Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 27	P&ID: M114/H2
Loc Dwg: E328/D3	Elec Scheme: E122/9	VDR ID: NONE	
Mfr Model Ref: CHRON 1474, 1572, & 1700/DATA SHEET M435			

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: R369-01-003

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EQ Equip No: R369-01-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION Plant I.D. Number: TE-4443C Component: TEMPERATURE ELEMENT (RTD) Manufacturer: ROSEMOUNT Model Number: 104MA23ABBB Purchase Order Number: M-170 Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM TUNNEL A HIGH TEMPERATURE ZONE 3 Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757' - 6"	Operating Time	1 HOUR	
	Temperature (°F)	300	
	Pressure (PSIG)	1.8	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	7.2 E06	
	Aging	40 YEARS	
Flood Level Elevation: 760' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION Plant I.D. Number: TE-4443D Component: TEMPERATURE ELEMENT (RTD) Manufacturer: ROSEMOUNT Model Number: 104MA23ABBB Purchase Order Number: M-170 Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM TUNNEL A HIGH TEMPERATURE ZONE 4 Accuracy: Spec: NA Location: STEAM TUNNEL Floor Elevation: 757' - 6"	Operating Time	1 HOUR	
	Temperature (°F)	300	
	Pressure (PSIG)	1.8	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	7.2 E06	
	Aging	40 YEARS	
Flood Level Elevation: 760' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M114/H1 Loc Dwg: E328/D3 Elec Scheme: E122/9 VDR ID: NONE Mfr Model Ref: CHRON 1474, 1572, & 1700/DATA SHEET M435							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M114/H1 Loc Dwg: E328/D4 Elec Scheme: E122/9 VDR ID: NONE Mfr Model Ref: CHRON 1474, 1572, & 1700/DATA SHEET M435							

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: R369-01-005

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EQ Equip No: R369-01-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4444A Component:	Temperature (*F)	300	
TEMPERATURE ELEMENT (RTD) Manufacturer:	Pressure (PSIG)	1.8	
ROSEMOUNT	Relative Humidity (%)	100	
Model Number: 104MA23ABBB	Chemical Spray	NA	
Purchase Order Number: M-170	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM TUNNEL B HIGH TEMPERATURE ZONE 1 Accuracy: Spec:	Radiation (Rad)	7.2 E06	
NA Location: STEAM TUNNEL Floor Elevation: 757'-6"	Aging	40 YEARS	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4444B Component:	Temperature (*F)	300	
TEMPERATURE ELEMENT (RTD) Manufacturer:	Pressure (PSIG)	1.8	
ROSEMOUNT	Relative Humidity (%)	100	
Model Number: 104MA23ABBB	Chemical Spray	NA	
Purchase Order Number: M-170	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM TUNNEL B HIGH TEMPERATURE ZONE 2 Accuracy: Spec:	Radiation (Rad)	7.2 E06	
NA Location: STEAM TUNNEL Floor Elevation: 757'-6"	Aging	40 YEARS	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M114/H2 Loc Dwg: E328/D2 Elec Scheme: E122/9 VDR ID: NONE Mfr Model Ref: CHRON 1474, 1572, & 1700/DATA SHEET M435							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M114/H2 Loc Dwg: E328/D3 Elec Scheme: E122/9 VDR ID: NONE Mfr Model Ref: CHRON 1474, 1572, & 1700/DATA SHEET M435							

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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EQ Equip No: R369-01-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4444C Component: TEMPERATURE ELEMENT (RTD) Manufacturer: ROSEMOUNT	Temperature (°F)	300	
Model Number: 104MA23ABBB	Pressure (PSIG)	1.8	
Purchase Order Number: M-170	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM TUNNEL B HIGH TEMPERATURE ZONE 3 Accuracy: Spec:	Chemical Spray	NA	
NA Location: STEAM TUNNEL	Seismic	NA	
Floor Elevation: 757'-6"	Radiation (Rad)	7.2 EO6	
	Aging	40 YEARS	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4444D Component: TEMPERATURE ELEMENT (RTD) Manufacturer: ROSEMOUNT	Temperature (°F)	300	
Model Number: 104MA23ABBB	Pressure (PSIG)	1.8	
Purchase Order Number: M-170	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM TUNNEL B HIGH TEMPERATURE ZONE 4 Accuracy: Spec:	Chemical Spray	NA	
NA Location: STEAM TUNNEL	Seismic	NA	
Floor Elevation: 757'-6"	Radiation (Rad)	7.2 EO6	
	Aging	40 YEARS	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA

Qual Life Begins: 1974
 Environment: HARSH
 EQ Sys No: 27
 P&ID: M114/H1
 Loc Dwg: E328/D3
 Elec Scheme: E122/9
 VDR ID: NONE
 Mfr Model Ref: CHRON 1474, 1572, & 1700/DATA SHEET M435

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA

Qual Life Begins: 1974
 Environment: HARSH
 EQ Sys No: 27
 P&ID: M114/H1
 Loc Dwg: E328/D4
 Elec Scheme: E122/9
 VDR ID: NONE
 Mfr Model Ref: CHRON 1474, 1572, & 1700/DATA SHEET M435

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Owner: IOWA ELECTRIC
 Facility: OUANE ARNOLD
 Unit: 1
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EQ Equip No: R369-01-010

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4445A Component: TEMPERATURE ELEMENT (RTD) Manufacturer: ROSEMOUNT	Temperature (°F)	300	
Model Number: 104MA23ABBB	Pressure (PSIG)	1.8	
Purchase Order Number: M-170	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM TUNNEL C HIGH TEMPERATURE ZONE 1 Accuracy: Spec:	Chemical Spray	NA	
NA Location: STEAM TUNNEL	Seismic	NA	
Floor Elevation: 757' - 6"	Radiation (Rad)	7.2 EO6	
	Aging	40 YEARS	
Flood Level Elevation: 760' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4445B Component: TEMPERATURE ELEMENT (RTD) Manufacturer: ROSEMOUNT	Temperature (°F)	300	
Model Number: 104MA23ABBB	Pressure (PSIG)	1.8	
Purchase Order Number: M-170	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM TUNNEL C HIGH TEMPERATURE ZONE 2 Accuracy: Spec:	Chemical Spray	NA	
NA Location: STEAM TUNNEL	Seismic	NA	
Floor Elevation: 757' - 6"	Radiation (Rad)	7.2 EO6	
	Aging	40 YEARS	
Flood Level Elevation: 760' - 0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 27		P&ID: M114/H2	
Loc Dwg: E328/E2		Elec Scheme: E122/9			VDR ID: NONE		
Mfr Model Ref: CHRON 1474, 1572, & 1700/DATA SHEET M435							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH		EQ Sys No: 27		P&ID: M114/H2		
Loc Dwg: E328/E3	Elec Scheme: E122/9		VDR ID: NONE				
Mfr Model Ref:	CHRON 1474, 1572, & 1700/DATA SHEET M435						

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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EQ Equip No: R369-01-012

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4445C Component:	Temperature (*F)	300	
TEMPERATURE ELEMENT (RTD) Manufacturer:	Pressure (PSIG)	1.8	
ROSEMOUNT	Relative Humidity (%)	100	
Model Number: 104MA23ABBB	Chemical Spray	NA	
Purchase Order Number: M-170	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM TUNNEL C HIGH TEMPERATURE ZONE 3 Accuracy: Spec:	Radiation (Rad)	7.2 EO6	
NA Location: STEAM TUNNEL	Aging	40 YEARS	
Floor Elevation: 757' -6"	Submergence	NA	
Flood Level Elevation: 760' -0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4445D Component:	Temperature (*F)	300	
TEMPERATURE ELEMENT (RTD) Manufacturer:	Pressure (PSIG)	1.8	
ROSEMOUNT	Relative Humidity (%)	100	
Model Number: 104MA23ABBB	Chemical Spray	NA	
Purchase Order Number: M-170	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM TUNNEL C HIGH TEMPERATURE ZONE 4 Accuracy: Spec:	Radiation (Rad)	7.2 EO6	
NA Location: STEAM TUNNEL	Aging	40 YEARS	
Floor Elevation: 757' -6"	Submergence	NA	
Flood Level Elevation: 760' -0" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA
Qual Life Begins: 1974		Environment: HARSH		EQ Sys No: 27		P&ID: M114/H1	
Loc Dwg: E328/E3		Elec Scheme: E122/9		VDR ID: NONE			
Mfrgr Model Ref: CHRON 1474, 1572, & 1700/DATA SHEET M435							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 27		P&ID: M114/H1	
Loc Dwg: E328/E4		Elec Scheme: E122/9		VDR ID: NONE			
Mfrgr Model Ref: CHRON 1474, 1572, & 1700/DATA SHEET M435							

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EQ Equip No: R369-01-014

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4446A Component: TEMPERATURE ELEMENT (RTD) Manufacturer: ROSEMOUNT	Temperature (°F)	300	
Model Number: 104MA23ABBB	Pressure (PSIG)	1.8	
Purchase Order Number: M-170	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM TUNNEL D HIGH TEMPERATURE ZONE 1 Accuracy: Spec: NA	Chemical Spray	NA	
Location: STEAM TUNNEL	Seismic	NA	
Floor Elevation: 757'-6"	Radiation (Rad)	7.2 E06	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4446B Component: TEMPERATURE ELEMENT (RTD) Manufacturer: ROSEMOUNT	Temperature (°F)	300	
Model Number: 104MA23ABBB	Pressure (PSIG)	1.8	
Purchase Order Number: M-170	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM TUNNEL O HIGH TEMPERATURE ZONE 2 Accuracy: Spec: NA	Chemical Spray	NA	
Location: STEAM TUNNEL	Seismic	NA	
Floor Elevation: 757'-6"	Radiation (Rad)	7.2 E06	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA
Qual Life Begins: Environment: EQ Sys No: P&ID: 1974 HARSH 27 M114/H2 Loc Dwg: E328/E2 Elec Scheme: E122/9 VDR ID: NONE Mfr Model Ref: CHRON 1474, 1572, & 1700/DATA SHEET M435							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA
Qual Life Begins: Environment: EQ Sys No: P&ID: 1974 HARSH 27 M114/H2 Loc Dwg: E328/E3 Elec Scheme: E122/9 VDR ID: NONE Mfr Model Ref: CHRON 1474, 1572, & 1700/DATA SHEET M435							

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 Facility: DUANE ARNOLD
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EQ Equip No: R369-01-016

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4446C Component:	Temperature (°F)	300	
TEMPERATURE ELEMENT (RTD) Manufacturer:	Pressure (PSIG)	1.8	
ROSEMOUNT	Relative Humidity (%)	100	
Model Number: 104MA23ABBB	Chemical Spray	NA	
Purchase Order Number: M-170	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM TUNNEL D HIGH TEMPERATURE ZONE 3 Accuracy: Spec:	Radiation (Rad)	7.2 E06	
NA Location: STEAM TUNNEL	Aging	40 YEARS	
Floor Elevation: 757'-6"	Submergence	NA	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4446D Component:	Temperature (°F)	300	
TEMPERATURE ELEMENT (RTD) Manufacturer:	Pressure (PSIG)	1.8	
ROSEMOUNT	Relative Humidity (%)	100	
Model Number: 104MA23ABBB	Chemical Spray	NA	
Purchase Order Number: M-170	Seismic	NA	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM TUNNEL D HIGH TEMPERATURE ZONE 4 Accuracy: Spec:	Radiation (Rad)	7.2 E06	
NA Location: STEAM TUNNEL	Aging	40 YEARS	
Floor Elevation: 757'-6"	Submergence	NA	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 27	P&ID: M114/H1		
Loc Dwg: E328/E3	Elec Scheme: E122/9			VDR ID: NONE			
Mfr Model Ref:	CHRON 1474, 1572, & 1700/DATA SHEET M435						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH		EQ Sys No: 27		P&ID: M114/H1		
Loc Dwg: E328/E4	Elec Scheme: E122/9		VDR ID: NONE				
Mfr Model Ref:	CHRON 1474, 1572, & 1700/DATA SHEET M435						

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EQ Equip No: R369-01-018

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4477A Component: TEMPERATURE ELEMENT (RTD) Manufacturer: ROSEMOUNT	Temperature (°F)	300	
Model Number: 104MA23ABBB	Pressure (PSIG)	1.8	
Purchase Order Number: M-170	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE A ZONE 1	Chemical Spray	NA	
Accuracy: Spec: NA	Seismic	NA	
Location: TURBINE BLDG.	Radiation (Rad)	1.0 E06	
Floor Elevation: 757' - 6"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4477B Component: TEMPERATURE ELEMENT (RTD) Manufacturer: ROSEMOUNT	Temperature (°F)	300	
Model Number: 104MA23ABBB	Pressure (PSIG)	1.8	
Purchase Order Number: M-170	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE A ZONE 2	Chemical Spray	NA	
Accuracy: Spec: NA	Seismic	NA	
Location: TURBINE BLDG.	Radiation (Rad)	1.0 E06	
Floor Elevation: 757' - 6"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH		EQ Sys No: 27		P&ID: M103/E6		
Loc Dwg: E309/D8	Elec Scheme: E122/9		VDR ID: NONE				
Mfr Model Ref:	CHRON 1474, 1572, & 1700/DATA SHEET M435						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	ND	YES	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 27	P&ID: M103/F8				
Loc Dwg: E308/D7	Elec Scheme: E122/9	VDR ID: NONE					
Mfr Model Ref:	CHRON 1474, 1572, & 1700/DATA SHEET M435						

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQ Equip No: R369-01-020

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4478A Component: TEMPERATURE ELEMENT (RTD) Manufacturer: ROSEMOUNT	Temperature (°F)	300	
Model Number: 104MA23ABBB	Pressure (PSIG)	1.8	
Purchase Order Number: M-170	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE B ZONE 1	Chemical Spray	NA	
Accuracy: Spec: NA Location: TURBINE BLDG.	Seismic	NA	
Floor Elevation: 757' -6"	Radiation (Rad)	1.0 EO6	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4478B Component: TEMPERATURE ELEMENT (RTD) Manufacturer: ROSEMOUNT	Temperature (°F)	300	
Model Number: 104MA23ABBB	Pressure (PSIG)	1.8	
Purchase Order Number: M-170	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE B ZONE 2	Chemical Spray	NA	
Accuracy: Spec: NA Location: TURBINE BLDG.	Seismic	NA	
Floor Elevation: 757' -6"	Radiation (Rad)	1.0 EO6	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NO	NA

Qual Life Begins: 1974
 Environment: HARSH
 EQ Sys No: 27
 P&ID: M103/F7
 Loc Dwg: E309/D7
 Elec Scheme: E122/9
 VDR ID: NONE
 Mfr Model Ref: CHRON 1474, 1572, & 1700/DATA SHEET M435

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NO	NA

Qual Life Begins: 1974
 Environment: HARSH
 EQ Sys No: 27
 P&ID: M103/F8
 Loc Dwg: E308/C7
 Elec Scheme: E122/9
 VDR ID: NONE
 Mfr Model Ref: CHRON 1474, 1572, & 1700/DATA SHEET M435

R369-01

Owner: IOWA ELECTRIC
 Facility: OUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: R369-01-021

EQUIPMENT QUALIFICATION REPORT DATA SHEET

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EQ Equip No: R369-01-022

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4479A Component: TEMPERATURE ELEMENT (RTD) Manufacturer: ROSEMOUNT	Temperature (°F)	300	
Model Number: 104MA23ABBB	Pressure (PSIG)	1.8	
Purchase Order Number: M-170	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE C ZONE 1	Chemical Spray	NA	
Accuracy: Spec: NA Location: TURBINE BLDG.	Seismic	NA	
Floor Elevation: 757' -6"	Radiation (Rad)	1.0 E06	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION	Operating Time	1 HOUR	
Plant I.D. Number: TE-4479B Component: TEMPERATURE ELEMENT (RTD) Manufacturer: ROSEMOUNT	Temperature (°F)	300	
Model Number: 104MA23ABBB	Pressure (PSIG)	1.8	
Purchase Order Number: M-170	Relative Humidity (%)	100	
Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE C ZONE 2	Chemical Spray	NA	
Accuracy: Spec: NA Location: TURBINE BLDG.	Seismic	NA	
Floor Elevation: 757' -6"	Radiation (Rad)	1.0 E06	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA

Qual Life Begins: 1974
 Environment: HARSH
 EQ Sys No: 27
 P&ID: M103/F6
 Loc Dwg: E309/E8
 Elec Scheme: E122/9
 VDR ID: NONE
 Mfr Model Ref: CHRON 1474, 1572, & 1700/DATA SHEET M435

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA

Qual Life Begins: 1974
 Environment: HARSH
 EQ Sys No: 27
 P&ID: M103/G8
 Loc Dwg: E308/D7
 Elec Scheme: E122/9
 VDR ID: NONE
 Mfr Model Ref: CHRON 1474, 1572, & 1700/DATA SHEET M435

R369-01
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: R369-01-023

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EQ Equip No: R369-01-024

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION Plant I.D. Number: TE-4480A Component: TEMPERATURE ELEMENT (RTD) Manufacturer: ROSEMOUNT Model Number: 104MA23ABBB Purchase Order Number: M-170 Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE D ZONE 1 Accuracy: Spec: NA Location: TURBINE BLDG. Floor Elevation: 757'-6"	Operating Time	1 HOUR	
	Temperature (°F)	300	
	Pressure (PSIG)	1.8	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
	Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence		NA

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: LEAK DETECTION Plant I.D. Number: TE-4480B Component: TEMPERATURE ELEMENT (RTD) Manufacturer: ROSEMOUNT Model Number: 104MA23ABBB Purchase Order Number: M-170 Function/Service: PRIMARY CONTAINMENT ISOLATION/MAIN STEAM LINE D ZONE 2 Accuracy: Spec: NA Location: TURBINE BLDG. Floor Elevation: 757'-6"	Operating Time	1 HOUR	
	Temperature (*F)	300	
	Pressure (PSIG)	1.8	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.0 E06	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M103/F6 Loc Dwg: E309/E8 Elec Scheme: E122/9 VDR ID: NONE Mfr Model Ref: CHRON 1474, 1572, & 1700/DATA SHEET M435							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	NO	YES	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 27 P&ID: M103/F8 Loc Dwg: E308/D7 Elec Scheme: E122/9 VDR ID: NONE Mfr Model Ref: CHRON 1474, 1572, & 1700/DATA SHEET M435							

S188-O1

Owner: IDWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: MOTOR-OPERATED BLOWER Manufacturer: SIEMENS Model Number: 2CH6 041-1U NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GEN NOTE 4	001		---	---	NONE
	Temperature (°F)	104		SEE GEN NOTE 7	001		---	---	NONE
	Pressure (PSIG)	0		SEE GEN NOTE 7	001		---	---	NONE
	Relative Humidity (%)	100		SEE GEN NOTE 7	001		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	8.9 E05		1.0 E06	001		REF. A	ANALYSIS	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (1)	001		REF. A	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . AGING EVALUATION FORM S188-O1 REV. 1, DATED 7/14/83 (CHRON 12750).	1 . QUALIFIED LIFE OF 40 YEARS IS BASED ON VERIFYING OPERABILITY ONCE PER MONTH AND CAPACITY ONCE PER OPERATING CYCLE.

S188-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: S188-01-001

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EQ Equip No: S188-01-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CDNT. Plant I.D. Number: 1K-25A Component: MOTOR-OPERATED BLOWER Manufacturer: SIEMENS Model Number: 2CH6 041-1U Purchase Order Number: APED Function/Service: MITIGATE RADIOACTIVE RELEASE/MAIN STEAM LINE LEAKAGE EXHAUST BLOWER Accuracy: Spec: NA Location: A CRD RR Floor Elevation: 771' - 10"	Operating Time	30 DAYS	RAD DOSE TAKEN FROM CALC 234-027 REV O DATED 9/16/82
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.9 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: 1K-25B Component: MOTOR-OPERATED BLOWER Manufacturer: SIEMENS Model Number: 2CH6 041-1U Purchase Order Number: APED Function/Service: MITIGATE RADIOACTIVE RELEASE/MAIN STEAM LINE LEAKAGE EXHAUST BLOWER Accuracy: Spec: NA Location: A CRD RR Floor Elevation: 771' - 10"	Operating Time	30 DAYS	RAD DOSE TAKEN FROM CALC 234-027 REV O DATED 9/16/82
	Temperature (°F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	8.9 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1977 Environment: HARSH EQ Sys No: 05 P&ID: M184/C5 Loc Dwg: M644/B6 Elec Scheme: E122/37 VDR ID: B21-C918 Mfr Model Ref: WALKDOWN 8/81, SHEET 274 & V.P. B21-3830-6-1							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1977 Environment: HARSH EQ Sys No: 05 P&ID: M184/C5 Loc Dwg: M644/C6 Elec Scheme: E122/37 VDR ID: B21-C918 Mfr Model Ref: WALKDOWN 8/81, SHEET 274 & V.P. B21-3830-6-1							

S223-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: FLDW TRANSMITTER Manufacturer: S.K. INSTRUMENT Model Number: 20-9651-8550 NUREG 0588 Applicable: NO Accuracy: Demo: 5%	Operating Time	30 DAYS		SEE GEN NOTE 4	001		---	---	NONE
	Temperature (*F)	130		SEE GEN NOTE 7	001		---	---	NONE
	Pressure (PSIG)	0		SEE GEN NOTE 7	001		---	---	NONE
	Relative Humidity (%)	100		SEE GEN NOTE 7	001		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	2.1 E07		NONE SEE NOTE (1)	001		REF. A	---	SEE NOTE (1)
	Aging	40 YEARS		NONE SEE NOTE (1)	001		---	---	SEE NOTE (1)
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . LETTER, A.LIEBY TO C. DERN DATED 2/6/79 (CHRON 7725).	1. SEE ACTION ITEM 10.

S223-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: S223-01-001

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EQ Equip No: S223-01-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: FM-8408A Component: FLOW TRANSMITTER Manufacturer: S.K. INSTRUMENT Model Number: 20-9651-8550 Purchase Order Number: APED Function/Service: MITIGATE RADIOACTIVE RELEASE/MAIN STEAM LINE "A" LEAKAGE FLOW Accuracy: Spec: 10% Location: STEAM TUNNEL Floor Elevation: 757' -6"	Operating Time	30 DAYS	
	Temperature (°F)	130	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
Flood Level Elevation: 760' -0" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT. Plant I.D. Number: FM-8408B Component: FLOW TRANSMITTER Manufacturer: S.K. INSTRUMENT Model Number: 20-9651-8550 Purchase Order Number: APED Function/Service: MITIGATE RADIOACTIVE RELEASE/MAIN STEAM LINE "B" LEAKAGE FLOW Accuracy: Spec: 10% Location: STEAM TUNNEL Floor Elevation: 757' -6"	Operating Time	30 DAYS	
	Temperature (°F)	130	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	2.1 E07	
	Aging	40 YEARS	
Flood Level Elevation: 760' -0" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 05 P&ID: M184/F4 Loc Dwg: E328/B5 Elec Scheme: E122/37 VDR ID: B21-N923A Mfr Model Ref: TELECON-CHRON 6477, AMETEK LTR-CHRON 2344							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 05 P&ID: M184/C8 Loc Dwg: E328/B5 Elec Scheme: E122/37 VDR ID: B21-N923B Mfr Model Ref: TELECON-CHRON 6477, AMETEK LTR-CHRON 2344							

S223-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: S223-01-003

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EQ Equip No: S223-01-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT.	Operating Time	30 DAYS	
Plant I.D. Number: FM-8408C Component:	Temperature (*F)	130	
FLOW TRANSMITTER	Pressure (PSIG)	0	
Manufacturer: S.K. INSTRUMENT	Relative Humidity (%)	100	
Model Number: 20-9651-8550	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: MITIGATE RADIOACTIVE RELEASE/MAIN STEAM LINE "C" LEAKAGE FLOW	Radiation (Rad)	2.1 E07	
Accuracy: Spec: 10% Location:	Aging	40 YEARS	
STEAM TUNNEL Floor Elevation: 757'-6"	Submergence	NA	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: MAIN STEAM LINE ISOL VALVE LEAKAGE CONT.	Operating Time	30 DAYS	
Plant I.O. Number: FM-8408D Component:	Temperature (*F)	130	
FLOW TRANSMITTER	Pressure (PSIG)	0	
Manufacturer: S.K. INSTRUMENT	Relative Humidity (%)	100	
Model Number: 20-9651-8550	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: MITIGATE RADIOACTIVE RELEASE/MAIN STEAM LINE "D" LEAKAGE FLOW	Radiation (Rad)	2.1 E07	
Accuracy: Spec: 10% Location:	Aging	40 YEARS	
STEAM TUNNEL Floor Elevation: 757'-6"	Submergence	NA	
Flood Level Elevation: 760'-0" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 05		P&ID: M184/C3	
Loc Dwg: E328/B5		Elec Scheme: E122/37		VDR ID: B21-N923C			
Mfr Model Ref:		TELECON-CHRON 6477, AMETEK LTR-CHRON 2344					

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: Environment: EQ Sys No: P&ID:							
1974		HARSH		05		M184/F8	
Loc Dwg: E328/B5		Elec Scheme: E122/37		VDR ID: B21-N923D			
Mfr Model Ref:		TELECON-CHRON 6477, AMETEK LTR-CHRON 2344					

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLO
 Unit: 1
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: PRESSURE SWITCH Manufacturer: STATIC-O-RING Model Number: 12N-AA5 NUREG 0588 Applicable: ND Accuracy: Demo: 0.5%	Operating Time	1 HOUR		30 DAYS SEE GENERAL NOTE 4	001		REF. A	TYPE TEST/ ANALYSIS	NONE
	Temperature (°F)	140		212 SEE GENERAL NOTE 7	001		REF. A	TYPE TEST	NONE
	Pressure (PSIG)	0		0.25 SEE GENERAL NOTE 7	001		REF. A	TYPE TEST	NONE
	Relative Humidity (%)	100		100 SEE GENERAL NOTE 7	001		REF. A	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	9.6 E05		1.5 E06	001		REF. B	ANALYSIS	NONE
	Aging	40 YEARS		30 YEARS SEE NOTE (1)	001		REF. B	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . EDS PROBLEM FILE NO. 0460-067-003, DATED MARCH 19, 1982 (CHRON 6863). B . AGING EVALUATION FORM S382-00 REV. 1, DATED 8/8/83 (CHRON 12840). (REFERENCES SUMMARIZED IN SECTION VIII OF SEMIANNUAL EQ	1 . QUALIFIED LIFE MAY BE EXTENDED TO 40 YEARS BY REPLACING BUNA-N ELASTOMERS AFTER 30 YEARS.

S382-02

Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
Docket: 50-331

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DOCUMENTATION REFERENCES:	NOTES:
<p>REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 61 AND 62.)</p>	

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: S382-02-001

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EQ Equip No: S382-02-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: AUTOMATIC DEPRESS- URIZATION	Operating Time	1 HOUR	
Plant I.D. Number: PS-1917B Component: PRESSURE SWITCH	Temperature (*F)	140	
Manufacturer: STATIC-O-RING	Pressure (PSIG)	0	
Model Number: 12N-AA5	Relative Humidity (%)	100	
Purchase Order Number: APED	Chemical Spray	NA	
Function/Service: CORE COOLING/ RHR PUMP 1P-229B DISCHARGE PERMISSIVE TO ADS	Seismic	NA	
Accuracy: Spec: 1% Location: NW CRNR RM/1C-129B	Radiation (Rad)	9.6 E05	
Floor Elevation: 716'-9"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: AUTOMATIC DEPRESS- URIZATION	Operating Time	1 HOUR	
Plant I.D. Number: PS-1925B Component: PRESSURE SWITCH	Temperature (*F)	140	
Manufacturer: STATIC-O-RING	Pressure (PSIG)	0	
Model Number: 12N-AA5	Relative Humidity (%)	100	
Purchase Order Number: APED	Chemical Spray	NA	
Function/Service: CORE COOLING/ RHR PUMP 1P-229D DISCHARGE PERMISSIVE TO ADS	Seismic	NA	
Accuracy: Spec: 1% Location: NW CRNR RM/1C-129B	Radiation (Rad)	9.6 E05	
Floor Elevation: 716'-9"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 07 P&ID: M119/B6 Loc Dwg: E316/E7 Elec Scheme: E121/56A VDR ID: E11-NO16B Mfr Model Ref: DATA SHEET E11-14							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 07 P&ID: M119/B7 Loc Dwg: E316/E7 Elec Scheme: E121/56A VDR ID: E11-NO16D Mfr Model Ref: DATA SHEET E11-14							

S382-02
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: S382-02-003

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EQ Equip No: S382-02-012

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: AUTOMATIC DEPRESS- URIZATION	Operating Time	1 HOUR	
Plant I.D. Number: PS-2023B Component:	Temperature (*F)	140	
PRESSURE SWITCH	Pressure (PSIG)	0	
Manufacturer: STATIC-O-RING	Relative Humidity (%)	100	
Model Number: 12N-AA5	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: CORE COOLING/ RHR PUMP 1P-229A DISCHARGE PERMISSIVE TO ADS	Radiation (Rad)	9.6 E05	
Accuracy: Spec: 1% Location: SE CRNR RM/1C-129A	Aging	40 YEARS	
Floor Elevation: 716' -9"	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: AUTOMATIC DEPRESS- URIZATION	Operating Time	1 HOUR	
Plant I.D. Number: PS-2024B Component:	Temperature (*F)	140	
PRESSURE SWITCH	Pressure (PSIG)	0	
Manufacturer: STATIC-O-RING	Relative Humidity (%)	100	
Model Number: 12N-AA5	Chemical Spray	NA	
Purchase Order Number: APED	Seismic	NA	
Function/Service: CORE COOLING/RHR PUMP 1P-229C DISCHARGE PERMISSIVE TO ADS	Radiation (Rad)	9.6 E05	
Accuracy: Spec: 1% Location: SE CRNR RM/1C-129A	Aging	40 YEARS	
Floor Elevation: 716' -9"	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 07 P&ID: M120/B4 Loc Dwg: E317/E3 Elec Scheme: E121/56 VDR ID: E11-NO16A Mfr Model Ref: DATA SHEET E11-14							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 07 P&ID: M120/B2 Loc Dwg: E317/E3 Elec Scheme: E121/56 VDR ID: E11-NO16C Mfr Model Ref: DATA SHEET E11-14							

S382-03

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: PRESSURE SWITCH Manufacturer: STATIC-O-RING Model Number: 5N-AA3 NUREG 0588 Applicable: ND Accuracy: Demo: 0.5%	Operating Time	1 HOUR		30 DAYS SEE GENERAL NOTE 4	001		REF. A,C	TYPE TEST/ ANALYSIS	NONE
	Temperature (°F)	140		212 SEE GENERAL NOTE 7	001		REF. A,C	TYPE TEST	NONE
	Pressure (PSIG)	0		0.25 SEE GENERAL NOTE 7	001		REF. A,C	TYPE TEST	NONE
	Relative Humidity (%)	100		100 SEE GENERAL NOTE 7	001		REF. A,C	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	9.6 E05		1.5 E06	001		REF. B,C	ANALYSIS	NONE
	Aging	40 YEARS		30 YEARS SEE NOTE (1)	001		REF. B,C	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . EDS PROBLEM FILE NO. 0460-067-003, DATED MARCH 19, 1982 (CHRON 6863). B . AGING EVALUATION FORM S382-00 REV. 1, DATED 8/8/83 (CHRON 12840). (REFERENCES SUMMARIZED IN SECTION VIII OF SEMIANNUAL EQ	1 . QUALIFIED LIFE MAY BE EXTENDED TO 40 YEARS BY REPLACING BUNA-N ELASTOMERS AFTER 30 YEARS.

S382-03

Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
Docket: 50-331

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DOCUMENTATION REFERENCES:	NOTES:
<p>REPORT IN RESPONSE TO FRC/NRC COMMENTS ON TER EQUIPMENT ITEMS 61 AND 62.)</p>	

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: S382-03-001

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EQ Equip No: S382-03-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: AUTOMATIC DEPRESS- URIZATION Plant I.D. Number: PS-1917A Component: PRESSURE SWITCH Manufacturer: STATIC-O-RING Model Number: 5N-AA3 Purchase Order Number: APED Function/Service: CORE COOLING/ RHR PUMP 1P-229B DISCHARGE PERMISSIVE TO ADS Accuracy: Spec: 2% Location: NW CRNR RM/1C-129B Floor Elevation: 716'-9"	Operating Time	1 HOUR	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.6 E05	
	Aging	40 YEARS	
	Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence		NA

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: AUTOMATIC DEPRESS- URIZATION Plant I.D. Number: PS-1925A Component: PRESSURE SWITCH Manufacturer: STATIC-O-RING Model Number: 5N-AA3 Purchase Order Number: APED Function/Service: CORE COOLING/ RHR PUMP 1P-229D DISCHARGE PERMISSIVE TO ADS Accuracy: Spec: 2% Location: NW CRNR RM/1C-129B Floor Elevation: 716'-9"	Operating Time	1 HOUR	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.6 E05	
	Aging	40 YEARS	
	Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence		NA

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH Loc Dwg: E316/E7 Elec Scheme: E121/56A Mfr Model Ref: DATA SHEET E11-14 EQ Sys No: 07 P&ID: M119/B6 VDR ID: E11-NO20B							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH Loc Dwg: E316/E7 Elec Scheme: E1221/56A Mfr Model Ref: DATA SHEET E11-14 EQ Sys No: 07 P&ID: M119/B7 VDR ID: E11-NO20D							

S382-03

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: S382-03-003

EQUIPMENT QUALIFICATION REPORT
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EQ Equip No: S382-03-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: AUTOMATIC DEPRESS- URIZATION Plant I.D. Number: PS-2023A Component: PRESSURE SWITCH Manufacturer: STATIC-D-RING Model Number: 5N-AA3 Purchase Order Number: APED Function/Service: CORE COOLING/ RHR PUMP 1P-229A DISCHARGE PERMISSIVE TO ADS Accuracy: Spec: 2% Location: SE CRNR RM/1C-129A Floor Elevation: 716' -9"	Operating Time	1 HOUR	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.6 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: AUTOMATIC DEPRESS- URIZATION Plant I.D. Number: PS-2024A Component: PRESSURE SWITCH Manufacturer: STATIC-O-RING Model Number: 5N-AA3 Purchase Order Number: APED Function/Service: CORE COOLING/ RHR PUMP 1P-229C DISCHARGE PERMISSIVE TO ADS Accuracy: Spec: 2% Location: SE CRNR RM/1C-129A Floor Elevation: 716' -9"	Operating Time	1 HOUR	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.6 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E317/E3 Mfgr Model Ref: DATA SHEET E11-14							
Environment: HARSH EQ Sys No: 07 P&ID: M120/B4 Elec Scheme: E121/56 VDR ID: E11-NO20A							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: E317/E3 Mfgr Model Ref: V.P. APED-E11-14							
Environment: HARSH EQ Sys No: 07 P&ID: M120/B2 Elec Scheme: E121/56 VDR ID: E11-NO20C							

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: S382-03-006

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EQ Equip No: S382-03-007

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: AUTOMATIC DEPRESS- URIZATION Plant I.D. Number: PS-2107A Component: PRESSURE SWITCH Manufacturer: STATIC-O-RING Model Number: 5N-AA3 Purchase Order Number: APED Function/Service: CORE COOLING/CORE SPRAY PUMP IP211A DISCHARGE PERMISSIVE TO ADS Accuracy: Spec: 2% Location: SE CRNR RM/1C-123 Floor Elevation: 716' - 9"	Operating Time	1 HOUR	
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.6 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: AUTOMATIC DEPRESS- URIZATION Plant I.D. Number: PS-2107B Component: PRESSURE SWITCH Manufacturer: STATIC-O-RING Model Number: 5N-AA3 Purchase Order Number: APED Function/Service: CORE COOLING/CORE SPRAY PUMP IP211A DISCHARGE PERMISSIVE TO ADS Accuracy: Spec: 2% Location: SE CRNR RM/1C-123 Floor Elevation: 716' - 9"	Operating Time	1 HOUR	
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.6 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 07 P&ID: M121/E3 Loc Dwg: E317/D3 Elec Scheme: E121/9 VDR ID: E21-NO08A Mfr Model Ref: DATA SHEET E21-009							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 07 P&ID: M121/D3 Loc Dwg: E317/D3 Elec Scheme: E121/9 VDR ID: E21-009A Mfr Model Ref: DATA SHEET E21-009							

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: S382-03-008

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EQ Equip No: S382-03-009

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: AUTOMATIC DEPRESS- URIZATION Plant I.D. Number: PS-2127A Component: PRESSURE SWITCH Manufacturer: STATIC-O-RING Model Number: 5N-AA3 Purchase Order Number: APED Function/Service: CORE COOLING/ CORE SPRAY PUMP 1P-211B DISCHARGE PERMISSIVE TO ADS Accuracy: Spec: 2% Location: NW CRNR RM/1C-124 Floor Elevation: 716'-9" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	1 HOUR	
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.6 E05	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: AUTOMATIC DEPRESS- URIZATION Plant I.D. Number: PS-2127B Component: PRESSURE SWITCH Manufacturer: STATIC-O-RING Model Number: 5N-AA3 Purchase Order Number: APED Function/Service: CORE COOLING/ CORE SPRAY PUMP 1P-211B DISCHARGE PERMISSIVE TO ADS Accuracy: Spec: 2% Location: NW CRNR RM/1C-124 Floor Elevation: 716'-9" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	1 HOUR	
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.6 E05	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 07 P&ID: M121/C5 Loc Dwg: E316/E7 Elec Scheme: E121/10 VDR ID: E21-NO08B Mfr Model Ref: DATA SHEET E21-009							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 07 P&ID: M121/C5 Loc Dwg: E316/E7 Elec Scheme: E121/10 VDR ID: E21-NO09B Mfr Model Ref: DATA SHEET E21-009							

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-001 NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	1 HOUR		SEE GENERAL NOTE 4	003		REF A,B	TYPE TEST	NONE SEE NOTE (3)
	Temperature (°F)	140		385	003		REF A,B	TYPE TEST	NONE
	Pressure (PSIG)	0		66	003		REF A,B	TYPE TEST	NONE
	Relative Humidity (%)	100		100	003		REF A,B	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	9.6 E05		SEE NOTE (1)	003		REF A,B	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (2)	003		REF. C	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . TARGET ROCK LETTER CN7548 DATED 8/29/80 (CHRON 7308). B . TARGET ROCK QUALIFICATION REPORT 2375 DATED 12/22/80 (V.P. 11186-223-M45139-5-2). TEST PROFILE IS APPENDIX F SECTION 6 OF THIS REPORT (CHRON 7651). C . AGING EVALUATION FORM T020-00A REV. 1, DATED 8/18/83 (CHRON 13052).	1 . TEST MODEL WAS IRRADIATED TO 2.3 E07 RADS BEFORE DESIGN BASIS EVENT TESTING AND AN ADDITIONAL 1.1 E08 RADS AFTER. 2 . QUALIFIED LIFE OF 40 YEARS REQUIRES: -REPLACEMENT OF O-RINGS AND GASKETS EVERY 5 YEARS -REPLACEMENT OF SOLENOID COIL, TERMINAL BLOCK, RECTIFIER (AC MODELS), AND WIRING EVERY 20 YEARS

TO20-01

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DOCUMENTATION REFERENCES:	NOTES:
	<p>3 . THIS EQUIPMENT WAS REVIEWED IN FRC TER C5257-499 DATED 8/18/82 AND CLASSIFIED AS CATEGORY I.A (EQUIPMENT QUALIFIED).</p>

TO20-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: TO20-01-003

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EQ Equip No: TO20-01-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	1 HOUR	
Plant I.D. Number: SV-1972 Component: SOLENOID VALVE	Temperature (*F)	140	
Manufacturer: TARGET ROCK	Pressure (PSIG)	0	
Model Number: 72V-001	Relative Humidity (%)	100	
Purchase Order Number: M-141C	Chemical Spray	NA	
Function/Service: CONTAINMENT ISOLATION /RHR HEAT EXCHANGER DISCHARGE SAMPLE B LINE ISOLATION	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	9.6 E05	
Location: NW CRNR RM	Aging	40 YEARS	
Floor Elevation: 716'-9"			
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	1 HOUR	
Plant I.D. Number: SV-1973 Component: SOLENOID VALVE	Temperature (*F)	140	
Manufacturer: TARGET ROCK	Pressure (PSIG)	0	
Model Number: 72V-001	Relative Humidity (%)	100	
Purchase Order Number: M-141C	Chemical Spray	NA	
Function/Service: CONTAINMENT ISOLATION /RHR HEAT EXCHANGER DISCHARGE SAMPLE B LINE ISOLATION	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	9.6 E05	
Location: NW CRNR RM	Aging	40 YEARS	
Floor Elevation: 716'-9"			
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH			EQ Sys No: 09		P&ID: M119/D3	
Loc Dwg: E316/E7	Elec Scheme:			E122/13		VDR ID: NONE	
Mfgr Model Ref:	V.P. M141C-2-6						

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974	Environment: HARSH		EQ Sys No: 09		P&ID: M119/D2		
Loc Dwg: E316/E7	Elec Scheme:		E122/13		VDR ID: NONE		
Mfgr Model Ref:	V.P. M141C-2-6						

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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EQ Equip No: TO20-01-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	1 HOUR	
Plant I.D. Number: SV-2051 Component: SOLENOID VALVE	Temperature (*F)	140	
Manufacturer: TARGET ROCK	Pressure (PSIG)	0	
Model Number: 72V-001	Relative Humidity (%)	100	
Purchase Order Number: M-141C	Chemical Spray	NA	
Function/Service: CONTAINMENT ISOLATION /RHR HEAT EXCHANGER DISCHARGE SAMPLE A LINE ISOLATION	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	9.6 E05	
Location: SE CRNR RM	Aging	40 YEARS	
Floor Elevation: 716' -9"			
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL	Operating Time	1 HOUR	
Plant I.D. Number: SV-2052 Component: SOLENOID VALVE	Temperature (*F)	140	
Manufacturer: TARGET ROCK	Pressure (PSIG)	0	
Model Number: 72V-001	Relative Humidity (%)	100	
Purchase Order Number: M-141C	Chemical Spray	NA	
Function/Service: CONTAINMENT ISOLATION /RHR HEAT EXCHANGER DISCHARGE SAMPLE A LINE ISOLATION	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	9.6 E05	
Location: SE CRNR RM	Aging	40 YEARS	
Floor Elevation: 716' -9"			
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M120/D7 Loc Dwg: E317/E3 Elec Scheme: E122/13 VDR ID: NONE Mfr Model Ref: V.P. M141C-2-6							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 09 P&ID: M120/D7 Loc Dwg: E317/E3 Elec Scheme: E122/13 VDR ID: NONE Mfr Model Ref: V.P. M141C-2-6							

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 Facility: DUANE ARNOLD
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SOLENOID VALVE INTEGRAL LIMIT SW Manufacturer: TARGET ROCK Model Number: 72V001 (ZS) NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	1 HOUR		SEE GENERAL NOTE 4	001		REF. A,B	TYPE TEST	NONE
	Temperature (°F)	140		385	001		REF. A,B	TYPE TEST	NONE
	Pressure (PSIG)	0		66	001		REF. A,B	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A,B	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	9.6 E05		SEE NOTE (1)	001		REF. A,B	TYPE TEST	NONE
	Aging	40 YEARS		20 YEARS SEE NOTE (2)	001		REF. C	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . TARGET ROCK LETTER CN7548 DATED 8/29/80 (CHRON 7308). B . TARGET ROCK QUALIFICATION REPORT 2375 DATED 12/22/80 (V.P. 11186-223-M45139-5-2). TEST PROFILE IS APPENDIX F SECTION 6 OF THIS REPORT (CHRON 7651). C . AGING EVALUATION FORM T020-00A REV. 1, DATED 8/18/83 (CHRON 13052).	1 . TEST MODEL WAS IRRADIATED TO 2.3 E07 RADS BEFORE DESIGN BASIS EVENT TESTING AND AN ADDITIONAL 1.1 E08 RADS AFTER. 2 . REPLACE LIMIT SWITCH EVERY 20 YEARS.

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 Facility: DUANE ARNOLD
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EQ Equip No: TO20-02-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-1972 Component: SOLENOID VALVE INTEGRAL LIMIT SW Manufacturer: TARGET ROCK Model Number: 72V001 (ZS) Purchase Order Number: M-141C Function/Service: POST ACCIDENT MONITORING/RHR SPRAY WATER SAMPLE LOOP B Accuracy: Spec: NA Location: NW CRNR RM Floor Elevation: 716' - 9" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	1 HOUR	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.6 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-1973 Component: SOLENOID VALVE INTEGRAL LIMIT SW Manufacturer: TARGET ROCK Model Number: 72V001 (ZS) Purchase Order Number: M-141C Function/Service: POST ACCIDENT MONITORING/RHR SPRAY WATER SAMPLE LOOP B Accuracy: Spec: NA Location: NW CRNR RM Floor Elevation: 716' - 9" Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	1 HOUR	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.6 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M119/D3 Loc Dwg: E316/E8 Elec Scheme: E122/13 VDR ID: NONE Mfr Model Ref: V.P. M141C-2-6							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M119/D2 Loc Dwg: E316/E8 Elec Scheme: E122/13 VDR ID: NONE Mfr Model Ref: V.P. M141C-2-6							

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 Facility: DUANE ARNOLD
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 EQ Equip No: TO20-02-003

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EQ Equip No: TO20-02-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-2051 Component: SOLENOID VALVE INTEGRAL LIMIT SW Manufacturer: TARGET ROCK Model Number: 72V001 (ZS) Purchase Order Number: M-141C Function/Service: POST ACCIDENT MONITORING/RHR SPRAY WATER SAMPLE LOOP A Accuracy: Spec: NA Location: SE CRNR RM Floor Elevation: 716' - 9"	Operating Time	1 HOUR	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.6 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-2052 Component: SOLENOID VALVE INTEGRAL LIMIT SW Manufacturer: TARGET ROCK Model Number: 72V001 (ZS) Purchase Order Number: M-141C Function/Service: POST ACCIDENT MONITORING/RHR SPRAY WATER SAMPLE LOOP A Accuracy: Spec: NA Location: SE CRNR RM Floor Elevation: 716' - 9"	Operating Time	1 HOUR	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	9.6 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M120/D7 Loc Dwg: E317/D3 Elec Scheme: E122/13 VDR ID: NONE Mfr Model Ref: V.P. M141C-2-6							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M120/D8 Loc Dwg: E317/D3 Elec Scheme: E122/13 VDR ID: NONE Mfr Model Ref: V.P. M141C-2-6							

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 81K002 NUREG 0588 Applicable: YES Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GENERAL NOTE 4	001		REF A,B	TYPE TEST	NONE
	Temperature (*F)	140		385	001		REF A,B	TYPE TEST	NONE
	Pressure (PSIG)	0		66	001		REF A,B	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF A,B	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.3 E07		SEE NOTE (1)	001		REF A,B	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (2)	001		REF. C	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . TARGET ROCK TWX DATED 9/14/81 (CHRON 4848). B . TARGET ROCK QUALIFICATION REPORT 2375 DATED 12/22/80 (V.P. 11186-223-M45139-5-2). TEST PROFILE IS APPENDIX F SECTION 6 OF THIS REPORT (CHRON 7651). C . AGING EVALUATION FORM TO20-00A REV. 1, DATED 8/18/83 (CHRON 13052).	1 . TEST MODEL WAS IRRADIATED TO 2.3 E07 RADS BEFORE DESIGN BASIS EVENT TESTING AND AN ADDITIONAL 1.1 E08 RADS AFTER. 2 . QUALIFIED LIFE OF 40 YEARS REQUIRES: -REPLACEMENT OF O-RINGS AND GASKETS EVERY 5 YEARS -REPLACEMENT OF SOLENOID COIL, TERMINAL BLOCK, RECTIFIER (AC MODELS), AND WIRING EVERY 20 YEARS.

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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 EQ Equip No: TO20-03-001

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EQ Equip No: TO20-03-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: POST-ACCIDENT SAMPLING Plant I.D. Number: SV-8772B Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 81K002 Purchase Order Number: DCR-932A Function/Service: PRIMARY CONTAINMENT ISOLATION/SAMPLE RETURN TO TORUS DOWNSTREAM ISOLATION Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716'-9"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: POST-ACCIDENT SAMPLING Plant I.D. Number: SV-8772A Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 81K002 Purchase Order Number: DCR-932A Function/Service: PRIMARY CONTAINMENT ISOLATION/SAMPLE RETURN TO TORUS DOWNSTREAM ISOLATION Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716'-9"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Loc Dwg: E316/D8 Mfr Model Ref: V.P. 11186-223-45139-6-2 Environment: HARSH EQ Sys No: 37 Elec Scheme: E112/19 P&ID: M187/E1 VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Loc Dwg: E316/D8 Mfr Model Ref: V.P. 11186-223-45139-6-2 Environment: HARSH EQ Sys No: 37 Elec Scheme: E112/19 P&ID: M187/E1 VDR ID: NONE							

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 Facility: DUANE ARNOLD
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-002 NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GENERAL NOTE 4	001		REF A,B	TYPE TEST	NONE SEE NOTE (3)
	Temperature (*F)	140		385	001		REF A,B	TYPE TEST	NONE
	Pressure (PSIG)	0		66	001		REF A,B	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF A,B	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	5.9 E06		SEE NOTE (1)	001		REF A,B	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (2)	001		REF. C	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . TARGET ROCK LETTER CN7548 DATED 8/29/80 (CHRON 7308). B . TARGET ROCK QUALIFICATION REPORT 2375 DATED 12/22/80 (V.P. 11186-223-M45139-5-2). TEST PROFILE IS APPENDIX F SECTION 6 OF THIS REPORT (CHRON 7651). C . AGING EVALUATION FORM TO20-00A REV. 1, DATED 8/18/83 (CHRON 13052).	1 . TEST MODEL WAS IRRADIATED TO 2.3 E07 RADS BEFORE DESIGN BASIS EVENT TESTING AND AN ADDITIONAL 1.1 E08 RADS AFTER. 2 . QUALIFIED LIFE OF 40 YEARS REQUIRES: -REPLACEMENT OF O-RINGS AND GASKETS EVERY 5 YEARS -REPLACEMENT OF SOLENOID COIL, TERMINAL BLOCK, RECTIFIER (AC MODELS), AND WIRING EVERY 20 YEARS.

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DOCUMENTATION REFERENCES:	NOTES:
	<p>3 . THIS EQUIPMENT WAS REVIEWED IN FRC TER C5257-499 DATED 8/18/82 AND CLASSIFIED AS CATEGORY I.A (EQUIPMENT QUALIFIED).</p>

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 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: TO20-04-001

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: RESIDUAL HEAT REMOVAL SERVICE WATER	Operating Time	30 DAYS	
Plant I.D. Number: SV-1942 Component: SOLENOID VALVE	Temperature (*F)	140	
Manufacturer: TARGET ROCK	Pressure (PSIG)	0	
Model Number: 72V-002	Relative Humidity (%)	100	
Purchase Order Number: M141	Chemical Spray	NA	
Function/Service: REACTOR CORE COOLING/ RHR SERVICE WATER SUPPLY TO RHR SYSTEM VENT LOOP B ISOLATION	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	5.9 E06	
Location: SE CRNR RM	Aging	40 YEARS	
Floor Elevation: 731' - 4"			
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (*F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:			
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:	Submergence		

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 13 P&ID: M113/F8 Loc Dwg: E317/E3 Elec Scheme: E121/46 VDR ID: NONE Mfr Model Ref: V.P. M141-3-6							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins: Environment: EQ Sys No: P&ID: Loc Dwg: Elec Scheme: VDR ID: Mfr Model Ref:							

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 Facility: DUANE ARNOLD
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-003 NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GENERAL NOTE 4	001		REF A,B	TYPE TEST	NONE SEE NOTE (3)
	Temperature (°F)	140		385	013		REF A,B	TYPE TEST	NONE
	Pressure (PSIG)	0		66	001		---	---	NONE
	Relative Humidity (%)	100		100	001		REF A,B	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.3 E07		SEE NOTE (1)	013		REF A,B	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (2)	001		REF. C	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . TARGET ROCK LETTER CN7548 DATED 8/29/80 (CHRON 7308). B . TARGET ROCK TEST REPORT 2302 DATED 5/9/79, CHRON 7305 (TEST PROFILE IS APPENDIX B OF THIS REPORT). C . AGING EVALUATION FORM T020-00B REV. 1, DATED 8/18/83 (CHRON 13053).	1 . TEST MODEL WAS IRRADIATED TO 2.3 E07 RADS BEFORE DESIGN BASIS EVENT TESTING AND AN ADDITIONAL 1.3 E07 RADS AFTER. 2 . QUALIFIED LIFE OF 40 YEARS REQUIRES: -REPLACEMENT OF O-RINGS AND GASKETS EVERY 5 YEARS -REPLACEMENT OF SOLENOID COILS, TERMINAL BLOCK, RECTIFIER (AC MODELS), AND WIRING EVERY 20 YEARS.

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DOCUMENTATION REFERENCES:	NOTES:
	<p>3 . THIS EQUIPMENT WAS REVIEWED IN FRC TER C5257-499 DATED 8/18/82 AND CLASSIFIED AS CATEGORY I.A (EQUIPMENT QUALIFIED).</p>

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
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 EQ Equip No: TO20-05-001

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EQ Equip No: TO20-05-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-8101A Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-003 Purchase Order Number: M-123C Function/Service: CONTAINMENT ISOLATION /INBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM A Accuracy: Spec: NA Location: RB-S Floor Elevation: 757'-6"	Operating Time	30 DAYS	
	Temperature (°F)	90	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	4.7 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-8101B Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-003 Purchase Order Number: M-123C Function/Service: CONTAINMENT ISOLATION /INBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM B Accuracy: Spec: NA Location: RB-N Floor Elevation: 757'-6"	Operating Time	30 DAYS	
	Temperature (°F)	90	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	4.7 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M181/F5 Loc Dwg: E319/E6 Elec Scheme: E122/29 VDR ID: NONE Mfr Model Ref: V.P. M123C-1-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M181/F4 Loc Dwg: E318/E4 Elec Scheme: E122/29 VDR ID: NONE Mfr Model Ref: V.P. M123C-1-5							

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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 EQ Equip No: TO20-05-003

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EQ Equip No: TO20-05-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-8102A Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-003 Purchase Order Number: M-123C Function/Service: CONTAINMENT ISOLATION /OUTBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM B Accuracy: Spec: NA Location: RB-S Floor Elevation: 757' -6"	Operating Time	30 DAYS	
	Temperature (*F)	90	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	4.7 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-8102B Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-003 Purchase Order Number: M-123C Function/Service: CONTAINMENT ISOLATION /OUTBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM B Accuracy: Spec: NA Location: RB-N Floor Elevation: 757' -6"	Operating Time	30 DAYS	
	Temperature (*F)	90	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	4.7 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M181/F5 Loc Dwg: E319/E6 Elec Scheme: E122/29 VDR ID: NONE Mfr Model Ref: V.P. M123C-1-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M181/F4 Loc Dwg: E318/E4 Elec Scheme: E122/29 VDR ID: NONE Mfr Model Ref: V.P. M123C-1-5							

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 Owner: IOWA ELECTRIC
 Facility: OUANE ARNOLD
 Unit: 1
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EQ Equip No: TO20-05-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL	Operating Time	30 DAYS	
Plant I.D. Number: SV-8103A Component: SOLENOID VALVE	Temperature (*F)	90	
Manufacturer: TARGET ROCK	Pressure (PSIG)	0	
Model Number: 72V-003	Relative Humidity (%)	100	
Purchase Order Number: M-123C	Chemical Spray	NA	
Function/Service: CONTAINMENT ISOLATION /INBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM A	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	4.7 E05	
Location: RB-S	Aging	40 YEARS	
Floor Elevation: 757' - 6"			
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL	Operating Time	30 DAYS	
Plant I.D. Number: SV-8103B Component: SOLENOID VALVE	Temperature (*F)	90	
Manufacturer: TARGET ROCK	Pressure (PSIG)	0	
Model Number: 72V-003	Relative Humidity (%)	100	
Purchase Order Number: M-123C	Chemical Spray	NA	
Function/Service: CONTAINMENT ISOLATION /INBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM B	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	4.7 E05	
Location: RB-N	Aging	40 YEARS	
Floor Elevation: 757' - 6"			
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 29	P&ID: M181/F5				
Loc Dwg: E319/E6	Elec Scheme: E122/29	VDR ID: NONE					
Mfgr Model Ref: V.P. M123C-1-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974	Environment: HARSH	EQ Sys No: 29	P&ID: M181/F4				
Loc Dwg: E318/E4	Elec Scheme: E122/29	VDR ID: NONE					
Mfgr Model Ref: V.P. M123C-1-5							

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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EQ Equip No: TO20-05-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-8104A Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-003 Purchase Order Number: M-123C Function/Service: CONTAINMENT ISOLATION / OUTBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM A Accuracy: Spec: NA Location: RB-S Floor Elevation: 757'-6"	Operating Time	30 DAYS	
	Temperature (°F)	90	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	4.7 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-8104B Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-003 Purchase Order Number: M-123C Function/Service: CONTAINMENT ISOLATION /OUTBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM B Accuracy: Spec: NA Location: RB-N Floor Elevation: 757'-6"	Operating Time	30 DAYS	
	Temperature (°F)	90	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	4.7 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M181/F5 Loc Dwg: E319/E6 Elec Scheme: E122/29 VDR ID: NONE Mfr Model Ref: V.P. M123C-1-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M181/F4 Loc Dwg: E318/F4 Elec Scheme: E122/29 VDR ID: NONE Mfr Model Ref: V.P. M123C-1-5							

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 Facility: DUANE ARNOLD
 Unit: 1
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EQ Equip No: T020-05-010

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-8105A Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-003 Purchase Order Number: M-123C Function/Service: CONTAINMENT ISOLATION /INBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM A Accuracy: Spec: NA Location: RB-S Floor Elevation: 757' -6"	Operating Time	30 DAYS	
	Temperature (*F)	90	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	4.7 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-8105B Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-003 Purchase Order Number: M-123C Function/Service: CONTAINMENT ISOLATION /INBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM B Accuracy: Spec: NA Location: RB-N Floor Elevation: 757' -6"	Operating Time	30 DAYS	
	Temperature (*F)	90	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	4.7 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M181/E5 Loc Dwg: E319/E6 Elec Scheme: E122/29 VDR ID: NONE Mfr Model Ref: V.P. M123C-1-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M181/E4 Loc Dwg: E318/E5 Elec Scheme: E122/29 VDR ID: NONE Mfr Model Ref: V.P. M123C-1-5							

TO20-05

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: TO20-05-011

EQUIPMENT QUALIFICATION REPORT
DATA SHEET

Sheet No. 383

Revision: 2

Date: 09/22/83

11186-234-NP-1

EQ Equip No: TO20-05-012

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-8106A Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-003 Purchase Order Number: M-123C Function/Service: CONTAINMENT ISOLATION /OUTBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM A Accuracy: Spec: NA Location: RB-S Floor Elevation: 757' -6"	Operating Time	30 DAYS	
	Temperature (°F)	90	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	4.7 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-8106B Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-003 Purchase Order Number: M-123C Function/Service: CONTAINMENT ISOLATION /OUTBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM B Accuracy: Spec: NA Location: RB-N Floor Elevation: 757' -6"	Operating Time	30 DAYS	
	Temperature (°F)	90	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	4.7 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: Environment: EQ Sys No: P&ID: 1974 HARSH 29 M181/E5 Loc Dwg: E319/E6 Elec Scheme: E122/29 VDR ID: NONE Mfgr Model Ref: V.P. M123C-1-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: Environment: EQ Sys No: P&ID: 1974 HARSH 29 M181/E4 Loc Dwg: E318/E5 Elec Scheme: E122/29 VDR ID: NONE Mfgr Model Ref: V.P. M123C-1-5							

T020-05
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: T020-05-013

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 384
 Revision: 2
 Date: 09/22/83

11186-234-NP-1

EQ Equip No: T020-05-014

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-8107A Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-003 Purchase Order Number: M-123C Function/Service: CONTAINMENT ISOLATION /INBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM A Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716' - 9"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-8107B Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-003 Purchase Order Number: M-123C Function/Service: CONTAINMENT ISOLATION /INBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM B Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716' - 9"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M181/D5 Loc Dwg: E316/D3 Elec Scheme: E122/29 VDR ID: NONE Mfr Model Ref: V.P. M123C-1-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M181/D4 Loc Dwg: E317/F7 Elec Scheme: E122/29 VDR ID: NONE Mfr Model Ref: V.P. M123C-1-5							

T020-05
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: T020-05-015

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 385
 Revision: 2
 Date: 09/22/83

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EQ Equip No: T020-05-016

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-8108A Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-003 Purchase Order Number: M-123C Function/Service: CONTAINMENT ISOLATION /OUTBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM A Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716' - 9"	Operating Time	30 DAYS	
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-8108B Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-003 Purchase Order Number: M-123C Function/Service: CONTAINMENT ISOLATION /OUTBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM B Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716' - 9"	Operating Time	30 DAYS	
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M181/E5 Loc Dwg: E316/D3 Elec Scheme: E122/29 VDR ID: NONE Mfr Model Ref: V.P. M123C-1-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M181/E4 Loc Dwg: E317/F7 Elec Scheme: E122/29 VDR ID: NONE Mfr Model Ref: V.P. M123C-1-5							

T020-05
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: T020-05-017

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 386
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 Date: 09/22/83

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EQ Equip No: T020-05-018

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-8109A Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-003 Purchase Order Number: M-123C Function/Service: CONTAINMENT ISOLATION /INBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM A Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-8109B Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-003 Purchase Order Number: M-123C Function/Service: CONTAINMENT ISOLATION /INBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM B Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716'-9"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M181/D5 Loc Dwg: E317/E4 Elec Scheme: E122/29 VDR ID: NONE Mfr Model Ref: V.P. M123C-1-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M181/D4 Loc Dwg: E316/E6 Elec Scheme: E122/29 VDR ID: NONE Mfr Model Ref: V.P. M123C-1-5							

TO20-05
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: TO20-05-019

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EQ Equip No: TO20-05-020

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-8110A Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-003 Purchase Order Number: M-123C Function/Service: CONTAINMENT ISOLATION /OUTBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM A Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-8110B Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-003 Purchase Order Number: M-123C Function/Service: CONTAINMENT ISOLATION /OUTBOARD ISOLATION OF CONTAINMENT ATMOSPHERE MONITORING VALVE SYSTEM B Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M181/D5 Loc Dwg: E317/E4 Elec Scheme: E122/29 VDR ID: NONE Mfr Model Ref: V.P. M123C-1-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M181/D4 Loc Dwg: E316/E6 Elec Scheme: E122/29 VDR ID: NONE Mfr Model Ref: V.P. M123C-1-5							

T020-06

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

Sheet No: 388
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 Date: 09/22/83

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-004 NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GENERAL NOTE 4	001		REF A,B	TYPE TEST	NONE SEE NOTE (3)
	Temperature (°F)	140		385	001		REF A,B	TYPE TEST	NONE
	Pressure (PSIG)	0		66	001		---	---	NONE
	Relative Humidity (%)	100		100	001		REF A,B	TYPE TEST	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.3 E07		SEE NOTE (1)	005		REF A,B	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (2)	001		REF. C	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . TARGET ROCK LETTER CN7548 DATED 8/29/80 (CHRON 7308). B . TARGET RDCK TEST REPORT 2302 DATED 5/9/79, CHRON 7305 (TEST PRDFILE IS APPENDIX B OF THIS REPORT). C . AGING EVALUATION FORM T020-00B REV. 1, DATED 8/18/83 (CHRON 13053).	1 . TEST MODEL WAS IRRADIATED TO 2.3 E07 RADS BEFORE DESIGN BASIS EVENT TESTING AND AN ADDITIONAL 1.3 E07 RADS AFTER. 2 . QUALIFIED LIFE OF 40 YEARS REQUIRES: -REPLACEMENT OF O-RINGS AND GASKETS EVERY 5 YEARS -REPLACEMENT OF SOLENOID COIL, TERMINAL BLOCK, RECTIFIER (AC MODELS), AND WIRING EVERY 20 YEARS.

TO20-06

Owner: IOWA ELECTRIC
Facility: DUANE ARNDLD
Unit: 1
Docket: 50-331

EQUIPMENT QUALIFICATION REPORT

Sheet No. 389

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DOCUMENTATION REFERENCES:	NOTES:
	<p>3 . THIS EQUIPMENT WAS REVIEWED IN FRC TER C5257-499 DATED 8/18/82 AND CLASSIFIED AS CATEGORY I.A (EQUIPMENT QUALIFIED).</p>

TO20-06

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: TO20-06-001

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 390
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 Date: 09/22/83

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EQ Equip No: TO20-06-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-4331A Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-004 Purchase Order Number: M-141C Function/Service: CONTAINMENT ISOLATION /CONTAINMENT SPRAY HEADER NITROGEN ISOLATION Accuracy: Spec: NA Location: RHR VALVE ROOM Floor Elevation: 757' -6"	Operating Time	30 DAYS	
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.6 E06	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M143/C2 Loc Dwg: E319/G6 Elec Scheme: E122/34 VDR ID: NONE Mfr Model Ref: V.P. M141C-27-5							

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-4331B Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-004 Purchase Order Number: M-141C Function/Service: CONTAINMENT ISOLATION /CONTAINMENT SPRAY HEADER NITROGEN ISOLATION Accuracy: Spec: NA Location: RHR VALVE ROOM Floor Elevation: 757' -6"	Operating Time	30 DAYS	
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.6 E06	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M143/C2 Loc Dwg: E319/G6 Elec Scheme: E122/34 VDR ID: NONE Mfr Model Ref: V.P. M141C-27-5							

TO20-06

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: TO20-06-003

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 391
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 Date: 09/22/83

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EQ Equip No: TO20-06-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTRDL Plant I.D. Number: SV-4332A Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-004 Purchase Order Number: M-141C Function/Service: CDNTAINMENT ISOLATION /CONTAINMENT SPRAY HEADER NITRDGEN ISOLATION Accuracy: Spec: NA Location: RB-S Floor Elevation: 786'-0"	Operating Time	30 DAYS	
	Temperature (°F)	90	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	7.5 E05	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-4332B Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-004 Purchase Order Number: M-141C Function/Service: CONTAINMENT ISOLATION /CONTAINMENT SPRAY HEADER NITROGEN ISOLATION Accuracy: Spec: NA Location: RB-S Floor Elevation: 786'-0"	Operating Time	30 DAYS	
	Temperature (°F)	90	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	7.5 E05	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M143/C2 Loc Dwg: E321/F6 Elec Scheme: E122/33 VDR ID: NONE Mfr Model Ref: V.P. M141C-27-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 29 P&ID: M143/C2 Loc Dwg: E321/F6 Elec Scheme: E122/33 VDR ID: NONE Mfr Model Ref: V.P. M141C-27-5							

TO20-06
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: TO20-06-005

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 392
 Revision: 2
 Date: 09/22/83

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EQ Equip No: TO20-06-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-4333A Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-004 Purchase Order Number: M-141C Function/Service: CONTAINMENT ISOLATION /TDRUS SPRAY HEADER NITROGEN ISOLATION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9" Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-4333B Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-004 Purchase Order Number: M-141C Function/Service: CONTAINMENT ISOLATION /TORUS SPRAY HEADER NITROGEN ISOLATION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716'-9"	Operating Time	30 DAYS	
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
	Flood Level Elevation: 716'-10" Above Flood Level: Yes: X No:	Submergence		NA

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: Environment: EQ Sys No: P&ID: 1974 HARSH 29 M143/C2 Loc Dwg: E317/F6 Elec Scheme: E122/34 VDR ID: NONE Mfr Model Ref: V.P. M141C-27-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: Environment: EQ Sys No: P&ID: 1974 HARSH 29 M143/C2 Loc Dwg: E317/E6 Elec Scheme: E122/34 VDR ID: NONE Mfr Model Ref: V.P. M141C-27-5							

TO20-06

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: TO20-06-007

EQUIPMENT QUALIFICATION REPORT DATA SHEET

Sheet No. 393
 Revision: 2
 Date: 09/22/83

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EQ Equip No: TO20-06-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-4334A Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-004 Purchase Order Number: M-141C Function/Service: CONTAINMENT ISOLATION /TORUS SPRAY HEADER NITROGEN ISOLATION Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716' - 9"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: CONTAINMENT ATMOSPHERE CONTROL Plant I.D. Number: SV-4334B Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 72V-004 Purchase Order Number: M-141C Function/Service: CONTAINMENT ISOLATION /TORUS SPRAY HEADER NITROGEN ISOLATION Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716' - 9"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH Loc Dwg: E316/D6 Elec Scheme: E122/33 Mfr Model Ref: V.P. M141C-27-5 EQ Sys No: 29 P&ID: M143/C2 VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH Loc Dwg: E316/D6 Elec Scheme: E122/33 Mfr Model Ref: V.P. M141C-27-5 EQ Sys No: 29 P&ID: M143/C2 VDR ID: NONE							

TO20-07

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit 1

Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT
EVALUATION SHEET

Sheet No: 394

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 81K-003 NUREG 0588 Applicable: YES Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GENERAL NOTE 4	001		REF. A,B	TYPE TEST	NONE
	Temperature (°F)	90		385	001		REF. A,B	TYPE TEST	NONE
	Pressure (PSIG)	0		66	001		REF. A,B	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A,B	TYPE TEST	NONE
	Chemical Spray	N		SEE NOTE (1)	001		REF. A,B	TYPE TEST	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	4.7 E05		SEE NOTE (2)	001		REF. A,B	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (3)	001		REF. C	TYPE TEST/ ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . TARGET ROCK TWX DATED 9/14/81 (CHRON 4848). B . TARGET ROCK QUALIFICATION REPORT 2375 DATED 12/22/80 (V.P. 11186-223-M45139-E-2). TEST PROFILE IS APPENDIX F, SECTION 6 OF THIS REPORT (CHRON 7651). C . AGING EVALUATION FORM TO20-00A REV. 1, DATED 8/18/83 (CHRON 13052).	1 . CHEMICAL SPRAY CONSISTED OF H3BO3 IN WATER WITH TRISODIUM PHOSPHATE ADDED TO ADJUST THE PH BETWEEN 8.6 AND 10.0. 2 . TEST MODEL WAS IRRIDIATED TO 2.3 E07 RADS BEFORE DESIGN BASIS EVENT TESTING AND AN ADDITIONAL 1.1 E08 RADS AFTER. 3 . QUALIFIED LIFE OF 40 YEARS REQUIRES: -REPLACEMENT OF O-RINGS AND GASKETS EVERY 5 YEARS

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DOCUMENTATION REFERENCES:	NOTES:
	<p>-REPLACEMENT OF SOLENOID COIL, TERMINAL BLOCK, RECTIFIER (AC MODELS), AND WIRING EVERY 20 YEARS.</p>

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EQ Equip No: TO20-07-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: POST-ACCIDENT SAMPLING Plant I.D. Number: SV-4594A Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 81K-003 Purchase Order Number: DCR-932A Function/Service: PRIMARY CONTAINMENT ISOLATION/JET PUMP SAMPLE UPSTREAM ISOLATION Accuracy: Spec: NA Location: RB-N Floor Elevation: 757' -6"	Operating Time	30 DAYS	
	Temperature (*F)	90	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	4.7 E05	
	Aging	40 YEARS	
	Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence		NA

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: POST-ACCIDENT SAMPLING Plant I.D. Number: SV-4594B Component: SOLENOID VALVE Manufacturer: TARGET ROCK Model Number: 81K-003 Purchase Order Number: DCR-932A Function/Service: PRIMARY CONTAINMENT ISDLATION/JET PUMP SAMPLE DOWNSTREAM ISOLATION Accuracy: Spec: NA Location: RB-N Floor Elevation: 757' -6"	Operating Time	30 DAYS	
	Temperature (°F)	90	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	4.7 E05	
	Aging	40 YEARS	
	Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence		NA

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 37 P&ID: M115/C3 Loc Dwg: M405-2/E6 Elec Scheme: E112/ Mfr Model Ref: IE PO 45139 VDR ID: 1031010-2-1-S							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 37 P&ID: M115/C3 Loc Dwg: M405-2/F6 Elec Scheme: E112/ Mfr Model Ref: IE PO 45139 VDR ID: 1031010-2-2-1-							

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Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: SOLENOID VALVE INTEGRAL LIMIT SWITCH Manufacturer: TARGET ROCK Model Number: 72V-004 (ZS) NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GENERAL NOTE 4	001		REF. A,B		NONE
	Temperature (°F)	140		385	001		REF. A,B		NONE
	Pressure (PSIG)	0		66	001		REF. A,B		NONE
	Relative Humidity (%)	100		100	001		REF. A,B		NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.3 E07		SEE NOTE (1)	001		REF. A,B		NONE
	Aging	40 YEARS		20 YEARS SEE NDTE (2)	001		REF. C		NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . TARGET ROCK LETTER CN7548 DATED 8/29/80 (CHRON 7308). B . TARGET ROCK TEST REPORT 2302 DATED 5/9/79 (CHRON 7305). TEST PROFILE IS APPENDIX B OF THIS REPORT. C . AGING EVALUATION FORM TO20-OOB REV. 1, DATED 8/18/83 (CHRON 13053).	1 . TEST MODEL WAS IRRADIATED TO 2.3 E07 RADS BEFORE DESIGN BASIS EVENT TESTING AND 1.3 E07 RADS AFTER. 2 . REPLACE LIMIT SWITCH EVERY 20 YEARS.

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 Facility: DUANE ARNOLD
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EQ Equip No: TO20-08-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-4331A Component: SOLENOID VALVE INTEGRAL LIMIT SWITCH Manufacturer: TARGET ROCK Model Number: 72V-004 (ZS) Purchase Order Number: M-141C Function/Service: POST ACCIDENT MONITORING/VALVE POSITION INDICATION Accuracy: Spec: NA Location: RHR VLV RM Floor Elevation: 757'-6"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.6 E06	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-4331B Component: SOLENOID VALVE INTEGRAL LIMIT SWITCH Manufacturer: TARGET ROCK Model Number: 72V-004 (ZS) Purchase Order Number: M-141C Function/Service: POST ACCIDENT MONITORING/VALVE POSITION INDICATION Accuracy: Spec: NA Location: RHR VLV RM Floor Elevation: 757'-6"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.6 E06	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M143/C2 Loc Dwg: M405-2/E7 Elec Scheme: E122/33-4 VDR ID: NONE Mfr Model Ref: M141C-27-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 36 P&ID: M143/C2 Loc Dwg: M405-2/E7 Elec Scheme: E122/33-4 VDR ID: NONE Mfr Model Ref: M141C-27-5							

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EQ Equip No: TO20-08-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-4332A Component: SOLENOID VALVE INTEGRAL LIMIT SWITCH Manufacturer: TARGET ROCK Model Number: 72V-004 (ZS) Purchase Order Number: M-141C Function/Service: POST ACCIDENT MONITORING/VALVE POSITION INDICATION Accuracy: Spec: NA Location: RB-S Floor Elevation: 786'-0"	Operating Time	30 DAYS	
	Temperature (*F)	90	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	7.5 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-4332B Component: SOLENOID VALVE INTEGRAL LIMIT SWITCH Manufacturer: TARGET ROCK Model Number: 72V-004 (ZS) Purchase Order Number: M-141C Function/Service: POST ACCIDENT MONITORING/VALVE POSITON INDICATION Accuracy: Spec: NA Location: RB-S Floor Elevation: 786'-0"	Operating Time	30 DAYS	
	Temperature (*F)	90	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	7.5 E05	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 36 P&ID: M143/C2 Loc Dwg: M405-3/D7 Elec Scheme: E122/33-4 VDR ID: NONE Mfr Model Ref: M141C-27-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 36 P&ID: M143/C2 Loc Dwg: M405-3/D7 Elec Scheme: E122/33-4 VDR ID: NONE Mfr Model Ref: M141C-27-5							

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EQ Equip No: TO20-08-006

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-4333A Component: SOLENOID VALVE INTEGRAL LIMIT SWITCH Manufacturer: TARGET ROCK Model Number: 72V-004 (ZS) Purchase Order Number: M-141C Function/Service: POST ACCIDENT MONITORING/VALVE POSITION INDICATION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716' - 9"	Operating Time	30 DAYS	
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-4333B Component: SOLENOID VALVE INTEGRAL LIMIT SWITCH Manufacturer: TARGET ROCK Model Number: 72V-004 (ZS) Purchase Order Number: M-141C Function/Service: POST ACCIDENT MONITORING/VALVE POSITION INDICATION Accuracy: Spec: NA Location: TORUS ROOM SOUTH Floor Elevation: 716' - 9"	Operating Time	30 DAYS	
	Temperature (*F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 36 P&ID: M143/C2 Loc Dwg: M405-1/D7 Elec Scheme: E122/33-4 VDR ID: NONE Mfr Model Ref: M141C-27-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 36 P&ID: M143/C2 Loc Dwg: M405-1/D7 Elec Scheme: E122/33-4 VDR ID: NONE Mfr Model Ref: M141C-27-5							

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EQ Equip No: TO20-08-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-4334A Component: SOLENOID VALVE INTEGRAL LIMIT SWITCH Manufacturer: TARGET ROCK Model Number: 72V-004 (ZS) Purchase Order Number: M-141C Function/Service: POST ACCIDENT MONITORING/VALVE POSITION INDICATION Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: Flood Level Elevation: NA Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: ZS-4334B Component: SOLENOID VALVE INTEGRAL LIMIT SWITCH Manufacturer: TARGET ROCK Model Number: 72V-004 (ZS) Purchase Order Number: M-141C Function/Service: POST ACCIDENT MONITORING/VALVE POSITION INDICATION Accuracy: Spec: NA Location: TORUS ROOM NORTH Floor Elevation: 716'-9"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.3 E07	
	Aging	40 YEARS	
Flood Level	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 36 P&ID: M143/C2 Loc Dwg: M405-1/E6 Elec Scheme: E122/33-4 VDR ID: NONE Mfr Model Ref: M141C-27-5							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981 Environment: HARSH EQ Sys No: 36 P&ID: M143/C2 Loc Dwg: M405-1/E6 Elec Scheme: E122/33-4 VDR ID: NONE Mfr Model Ref: M141C-27-5							

U075-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
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EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: PRESSURE SWITCH Manufacturer: UNITED ELECTRIC CONTROLS Model Number: J300-270 NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GENERAL NOTE 4	001		---	---	NONE
	Temperature (°F)	104		SEE GENERAL NOTE 7	001		---	---	NONE
	Pressure (PSIG)	0		SEE GENERAL NOTE 7	001		---	---	NONE
	Relative Humidity (%)	100		SEE GENERAL NOTE 7	001		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	1.1 E06		2.0 E08	001		REF. A	ANALYSIS	NONE
	Aging	40 YEARS		40 YEARS	001		REF. A	ANALYSIS	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . AGING EVALUATION FORM U075-01 REV. 0, DATED 6/13/83 (CHRON 12752).	

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EQ Equip No: U075-01-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT	Operating Time	30 DAYS	RAD DOSE IS BASED ON A DISTANCE OF 33.5 FT FROM SGT FILTER (CALC 221-004 REV. 2)
Plant I.D. Number: PS-7333A Component: PRESSURE SWITCH	Temperature (°F)	104	
Manufacturer: UNITED ELECTRIC CONTROLS Model Number: J300-270	Pressure (PSIG)	0	
Purchase Order Number: M-86	Relative Humidity (%)	100	
Function/Service: MITIGATE RADIOACTIVE RELEASE/CONTROL H&V INSTRUMENT AIR COMPRESSOR 1K-3	Chemical Spray	NA	
Accuracy: Spec: NA	Seismic	NA	
Location: SGT ROOM	Radiation (Rad)	1.1 E06	
Floor Elevation: 786' -0"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT	Operating Time	30 DAYS	RAD DDSE IS BASED ON A DISTANCE OF 33.5 FT FROM SGT FILTER (CALC 221-004 REV. 2)
Plant I.D. Number: PS-7333B Component: PRESSURE SWITCH	Temperature (°F)	104	
Manufacturer: UNITED ELECTRIC CONTROLS Model Number: J300-270	Pressure (PSIG)	0	
Purchase Order Number: M-86	Relative Humidity (%)	100	
Function/Service: MITIGATE RADIOACTIVE RELEASE/CONTROL H&V INSTRUMENT AIR COMPRESSOR 1K-4	Chemical Spray	NA	
Accuracy: Spec: NA	Seismic	NA	
Location: SGT ROOM	Radiation (Rad)	1.1 E06	
Floor Elevation: 786' -0"	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: Environment: EQ Sys No: P&ID: 1974 HARSH 10 M173/B6 Loc Dwg: E315/G6 Elec Scheme: E113/144 VDR ID: NONE Mfgr Model Ref: WALKDOWN 8/81 SH 169							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: Environment: EQ Sys No: P&ID: 1974 HARSH 10 M173/B8 Loc Dwg: E315/F6 Elec Scheme: E113/144 VDR ID: NONE Mfgr Model Ref: WALKDOWN 8-81 SH 169							

U075-01

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

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EQ Equip No: U075-01-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: PS-7334A Component: PRESSURE SWITCH Manufacturer: UNITED ELECTRIC CONTROLS Model Number: J300-270 Purchase Order Number: M-86 Function/Service: MITIGATE RADIOACTIVE RELEASE/CONTROL H&V INSTRUMENT AIR COMPRESSOR 1K-3 Accuracy: Spec: NA Location: SGT ROOM Floor Elevation: 786'-0"	Operating Time	30 DAYS	RAD DOSE IS BASED ON A DISTANCE OF 33.5 FT FRDM SGT FILTER (CALC 221-004 REV. 2)
	Temperature (*F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.1 EO6	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: STANDBY GAS TREATMENT Plant I.D. Number: PS-7334B Component: PRESSURE SWITCH Manufacturer: UNITED ELECTRIC CONTROLS Model Number: J300-270 Purchase Order Number: M-86 Function/Service: MITIGATE RADIOACTIVE RELEASE/CONTROL H&V INSTRUMENT AIR COMPRESSOR 1K-4 Accuracy: Spec: NA Location: SGT ROOM Floor Elevation: 786' -0"	Operating Time	30 DAYS	RAD DOSE IS BASED ON A DISTANCE OF 33.5 FT FROM SGT FILTER (CALC 221-004 REV. 2)
	Temperature (*F)	104	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	1.1 EO6	
	Aging	40 YEARS	
	Submergence	NA	
Flood Level Elevation: NA Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 10 P&ID: M173/B6 Loc Dwg: E315/G6 Elec Scheme: E113/144 VDR ID: NONE Mfr Model Ref: WALKDOWN 8-81 SHEET 170							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Environment: HARSH EQ Sys No: 10 P&ID: M173/B8 Loc Dwg: E315/F6 Elec Scheme: E113/144 VDR ID: NONE Mfr Model Ref: WALKDOWN 8-81 SHEET 171							

V115-01

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: RADIATION ELEMENT Manufacturer: VICTOREEN Model Number: 877-1 NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	002		REF. A	TYPE TEST	NONE SEE NOTE (3)
	Temperature (°F)	SEE GEN NOTE 6		357	002		REF. A	TYPE TEST	NONE
	Pressure (PSIG)	SEE GEN NOTE 6		133	002		REF. A	TYPE TEST	NONE
	Relative Humidity (%)	100		100	002		REF. A	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	002		REF. A	TYPE TEST	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	4.3 E07		2.2 E08	002		REF. A	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS SEE NOTE (2)	002		REF. B	---	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . QUALIFICATION TYPE TEST DATA REPORT FOR CLASS 1E VICTOREEN HIGH RANGE CONTAINMENT RADIATION AREA MONITOR SYSTEM 950.301 (V.P. 11186-211-37439-2(6)-1). TEST PROFILE IS FIGURE VI-1 OF THIS REPORT. B . AGING EVALUATION FORM V115-01 DATED 6/18/82 (CHRON 8120).	1 . SPRAY MAKEUP WAS 0.28M H3BO3 IN WATER WITH SUFFICIENT NAOH TO ADJUST PH TO 11.0 AT 77F. THIS IS A MORE SEVERE SPRAY THAN DEMINERALIZED WATER. 2 . DETECTOR CONTAINS NO AGING SUSCEPTABLE MATERIALS; BUT UNIT SHOULD BE RETURNED TO THE FACTORY FOR CALIBRATION EVERY 5 YEARS.

V115-01

Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
Docket: 50-331

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DOCUMENTATION REFERENCES:	NOTES:
	<p>3 . THIS EQUIPMENT WAS REVIEWED IN FRC TER C5257-499 DATED 8/18/82 AND CLASSIFIED AS CATEGORY I.A (EQUIPMENT QUALIFIED).</p>

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 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: V115-01-002

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EQ Equip No: V115-01-004

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: RE-9184A Component: RADIATION ELEMENT Manufacturer: VICTOREEN Model Number: 877-1 Purchase Order Number: DCR-909 Function/Service: POST ACCIDENT MONITORING/RADIATION MONITORING Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 757'-6" Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION Plant I.D. Number: RE-9184B Component: RADIATION ELEMENT Manufacturer: VICTOREEN Model Number: 877-1 Purchase Order Number: DCR-909 Function/Service: POST ACCIDENT MONITORING/RADIATION MONITORING Accuracy: Spec: NA Location: DRYWELL Floor Elevation: 757'-6" Flood Level Elevation: 744'-0" Above Flood Level: Yes: X No:	Operating Time	30 DAYS	
	Temperature (°F)	SEE GENERAL NOTE 6	
	Pressure (PSIG)	SEE GENERAL NOTE 6	
	Relative Humidity (%)	100	
	Chemical Spray	DEMIN WATER	
	Seismic	NA	
	Radiation (Rad)	4.3 E07	
	Aging	40 YEARS	
	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1980 Environment: HARSH Loc Dwg: E329/E5 Elec Scheme: E63 Mfr Model Ref: DCR-909 ITEM NO.6.2A EQ Sys No: 36 P&ID: M148/C5 VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1980 Environment: HARSH Loc Dwg: E329/C4 Elec Scheme: E63 Mfr Model Ref: DCR-909 ITEM NO.6.2A EQ Sys No: 36 P&ID: M148/C4 VDR ID: NONE							

V115-01

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: V115-01-006

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EQ Equip No: V115-01-008

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION	Operating Time	30 DAYS	
Plant I.D. Number: RE-9185A Component:	Temperature (°F)	140	
RADIATION ELEMENT	Pressure (PSIG)	0	
Manufacturer: VICTOREEN	Relative Humidity (%)	100	
Model Number: 877-1	Chemical Spray	NA	
Purchase Order Number: DCR-909	Seismic	NA	
Function/Service: POST ACCIDENT MONITORING/RADIATION MONITORING	Radiation (Rad)	1.3 E07	
Accuracy: Spec: NA Location: TORUS ROOM NORTH	Aging	40 YEARS	
Floor Elevation: 716' - 9"	Submergence	NA	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:			

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ACCIDENT MONITORING INSTRUMENTATION	Operating Time	30 DAYS	
Plant I.D. Number: RE-9185B Component:	Temperature (°F)	140	
RADIATION ELEMENT	Pressure (PSIG)	0	
Manufacturer: VICTOREEN	Relative Humidity (%)	100	
Model Number: 877-1	Chemical Spray	NA	
Purchase Order Number: DCR-909	Seismic	NA	
Function/Service: POST ACCIDENT MONITORING/RADIATION MONITORING	Radiation (Rad)	1.3 E07	
Accuracy: Spec: NA Location: TORUS ROOM SOUTH	Aging	40 YEARS	
Floor Elevation: 716' - 9"	Submergence	NA	
Flood Level Elevation: 716' - 10" Above Flood Level: Yes: X No:			

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1980 Environment: HARSH EQ Sys No: 36 P&ID: M148/C5							
Loc Dwg: E316/F6 Elec Scheme: E63 VDR ID: NONE							
Mfr Model Ref: DCR-909 ITEM NO.6.2A							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1980 Environment: HARSH EQ Sys No: 36 P&ID: M148/C4							
Loc Dwg: E317/G2 Elec Scheme: E63 VDR ID: NONE							
Mfr Model Ref: DCR-909 ITEM NO.6.2A							

V115-02

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: CABLE ASSEMBLY Manufacturer: VICTOREEN Model Number: 878-1-9 NUREG 0588 Applicable: YES Accuracy: Demo: NA	Operating Time	30 DAYS		30 DAYS	001		REF. A,C	TYPE TEST	NONE
	Temperature (°F)	SEE GENERAL NOTE 6		357	001		REF. A,C	TYPE TEST	NONE
	Pressure (PSIG)	SEE GENERAL NOTE 6		133	001		REF. A,C	TYPE TEST	NONE
	Relative Humidity (%)	100		100	001		REF. A,C	TYPE TEST	NONE
	Chemical Spray	DEMIN WATER		SEE NOTE (1)	001		REF. A,C	TYPE TEST	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	4.3 E07		2.2 E08	001		REF. A,C	TYPE TEST	NONE
	Aging	40 YEARS		40 YEARS	001		REF. B,C	TYPE TEST	NONE
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
A . QUALIFICATION TYPE TEST DATA REPORT FOR CLASS 1E VICTOREEN HIGH RANGE CONTAINMENT RADIATION AREA MONITOR SYSTEM 950.301 (V.P. 11186-211-37439-2(6)-1). TEST PROFILE IS FIGURE VI-1 OF THIS REPORT. B . AGING EVALUATION FORM V115-02 DATED 6/18/82 (CHRON 8120). C . SECTION VII.K OF SEMIANNUAL EQ REPORT IN RESPONSE TO FRC/NRC	1. SPRAY MAKE-UP WAS 0.28M BORIC ACID IN WATER WITH SUFFICIENT NAOH TO ADJUST PH TO 11.0 AT 77F. THIS IS MDRE SEVERE THAN DEMINERALIZED WATER SPRAY.

V115-02

Owner: IOWA ELECTRIC
Facility: DUANE ARNOLD
Unit: 1
Docket: 50-331

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DOCUMENTATION REFERENCES:	NOTES:
<p>COMMENTS ON TER EQUIPMENT ITEM 115.</p>	

V115-02
 Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331
 EQ Equip No: V115-02-001

EQUIPMENT QUALIFICATION REPORT DATA SHEET

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EQ Equip No:

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ANCILLARY COMPONENTS	Operating Time	30 DAYS	THE REQUIRED ENVIRONMENT IS THE WORST CASE TEMPERATURE, HUMIDITY, PRESSURE AND RADIATION CONDITIONS IN THE DRYWELL.
Plant I.D. Number: INSTRUMENT CABLE Component: CABLE ASSEMBLY	Temperature (°F)	SEE GENERAL NOTE 6	
Manufacturer: VICTOREEN	Pressure (PSIG)	SEE GENERAL NOTE 6	
Model Number: 878-1-9	Relative Humidity (%)	100	
Purchase Order Number: DCR-909	Chemical Spray	DEMIN WATER	
Function/Service: SUPPORT/POST ACCIDENT RADIATION MONITORING	Seismic	NA	
Accuracy: Spec: NA	Radiation (Rad)	4.3 E07	
Location: VARIDUS	Aging	40 YEARS	
Floor Elevation: VARIOUS			
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System:	Operating Time		
Plant I.D. Number:	Temperature (°F)		
Component:	Pressure (PSIG)		
Manufacturer:	Relative Humidity (%)		
Model Number:	Chemical Spray		
Purchase Order Number:	Seismic		
Function/Service:	Radiation (Rad)		
Accuracy: Spec:	Aging		
Location:			
Floor Elevation:			
Flood Level Elevation: Above Flood Level: Yes: No:	Submergence		

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	NO	NO	NO	NO	NO	NA
Qual Life Begins: 1981	Environment: HARSH		EQ Sys No: 32		P&ID: NA		
Loc Dwg: NA	Elec Scheme: NA		VDR ID: NONE				
Mfr Model Ref: DCR-909 ITEM NO. 6.2B							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
Qual Life Begins:	Environment:		EQ Sys No:		P&ID:		
Loc Dwg:	Elec Scheme:		VDR ID:				
Mfr Model Ref:							

W120-05

Owner: IOWA ELECTRIC
 Facility: DUANE ARNOLD
 Unit: 1
 Docket No: 50-331

EQUIPMENT QUALIFICATION REPORT EVALUATION SHEET

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EQUIPMENT DESCRIPTION	ENVIRONMENT				DOCUMENTATION REFERENCES			QUALIFICATION METHOD(S)	OUTSTANDING ITEMS
	Parameter	Required		Qualification	Reqd.		Qual.		
Component: FAN MOTOR Manufacturer: WESTINGHOUSE Model Number: TEFC NUREG 0588 Applicable: NO Accuracy: Demo: NA	Operating Time	30 DAYS		SEE GEN NOTE 4	001		---	---	NONE
	Temperature (°F)	140		SEE GEN NOTE 7	001		---	---	NONE
	Pressure (PSIG)	0		SEE GEN NOTE 7	001		---	---	NONE
	Relative Humidity (%)	100		SEE GEN NOTE 7	001		---	---	NONE
	Chemical Spray	NA		---	---		---	---	NONE
	Seismic	NA		---	---		---	---	---
	Radiation (Rad)	5.9 E06		SEE NOTE (1)	001		---	---	SEE NOTE (1)
	Aging	40 YEARS		SEE NOTE (1)	001		---	---	SEE NOTE (1)
	Submergence	NA		---	---		---	---	NONE

DOCUMENTATION REFERENCES	NOTES
	1. SEE ACTION ITEM 14.

W120-05

Owner: IOWA ELECTRIC

Facility: DUANE ARNOLD

Unit: 1

Docket No: 50-331

EQ Equip No: W120-05-001

EQUIPMENT QUALIFICATION REPORT
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EQ Equip No: W120-05-002

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ENGINEERED SAFEGUARD ROOMS H & V Plant I.D. Number: 1V-AC-11 Component: FAN MOTOR Manufacturer: WESTINGHOUSE Model Number: TEFC Purchase Order Number: M-095 Function/Service: SUPPORT/RHR AND CORE SPRAY PUMP ROOM COOLING Accuracy: Spec: NA Location: NW CRNR RM Floor Elevation: 747' -6"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

EQUIPMENT DESCRIPTION	ENVIRONMENT		
	Parameter	Required	Remarks
System: ENGINEERED SAFEGUARD ROOMS H & V Plant I.D. Number: 1V-AC-12 Component: FAN MOTOR Manufacturer: WESTINGHOUSE Model Number: TEFC Purchase Order Number: M-095 Function/Service: SUPPORT/RHR AND CORE SPRAY PUMP ROOM COOLING Accuracy: Spec: NA Location: SE CRNR RM Floor Elevation: 747' -0"	Operating Time	30 DAYS	
	Temperature (°F)	140	
	Pressure (PSIG)	0	
	Relative Humidity (%)	100	
	Chemical Spray	NA	
	Seismic	NA	
	Radiation (Rad)	5.9 E06	
	Aging	40 YEARS	
Flood Level Elevation: NA Above Flood Level: Yes: X No:	Submergence	NA	

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: M646/E7 Mfr Model Ref: V.P. M95-59-2 AND M95-32-2							
Environment: HARSH EQ Sys No: 18 P&ID: M171/A6 Elec Scheme: E113/147 VDR ID: NONE							

Accidents:	LOCA	MSLB	FWLB	HPCI	RCIC	RWCU	SCRM
	YES	YES	YES	YES	YES	YES	NA
Qual Life Begins: 1974 Loc Dwg: M660/E3 Mfr Model Ref: V.P. M95-59-2 AND M95-32-2							
Environment: HARSH EQ Sys No: 18 P&ID: M171/A6 Elec Scheme: E113/147 VDR ID: NONE							