

I & E Bulletin 79-01B  
Equipment Qualification

Design Inputs are outlined in the Cover Report.

Assumptions are outlined in the Cover Report.

Methods are outlined in the Cover Report.

EDS Nuclear Report No. 02-1040-1076.

REV. NO.	REVISION	APPROVED	DATE
0	original	Jeffrey Sotawsky	10-2-81
2	GENERAL MANUAL REVISIONS	Mk Woodward	11/2/83

8312200283 831129  
PDR ADOCK 05000346  
P

Facility: Davis-Besse Unit 1  
Docket: 50-346

MASTER LIST  
HARSH ENVIRONMENT

Index No: M-001  
Rev.: 2

SAFETY FEATURES ACTUATION SYSTEM

Prepared by: J Lewis  
Checked by: SMC

Date: 9/30/83  
Date: 8/30/84

Worksheet Index No.	Rev.	Plant ID Number	Generic Name	LOCATION		REMARKS
				Inside Primary Containment	Outside Primary Containment	
219H-004	2	PT2001	Pressure Transmitter		Rm. 501	
219H-005	2	PT2002	Pressure Transmitter		Rm. 500	
219H-006	2	PT2003	Pressure Transmitter		Rm. 426	
219H-007	2	PTRC2A3	Pressure Transmitter	Rm. 410		
219H-008	2	PTRC2A4	Pressure Transmitter	Rm. 410		
219H-009	2	PTRC2B3	Pressure Transmitter	Rm. 407		
219H-010	2	PTRC2B4	Pressure Transmitter	Rm. 407		
219H-011	0	RE2004	Radiation Detector		Annulus	
219H-012	0	RE2005	Radiation Detector		Annulus	
219H-013	0	RE2006	Radiation Detector		Annulus	
219H-014	0	RE2007	Radiation Detector		Annulus	

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MASTER LIST  
NON-HARSH ENVIRONMENT  
SAFETY FEATURES ACTUATION SYSTEM

Index No. 9M-002  
Rev.: 2

Prepared by:  
Checked by:

*E. Lewis*

Date:  
Date:

*9/30/83*

Worksheet Index No.	Rev.	Plant ID Number	Generic Name	LOCATION		REMARKS
				Inside Primary Containment	Outside Primary Containment	
	0	IC3630	Auxiliary Shutdown Panel		Rm. 324	
	0	IC5705	Control Console		Rm. 505	
	0	IC5716	Engineering Safety Feature Panel		Rm. 505	
	0	IC5717	Engineering Safety Feature Panel		Rm. 505	
	0	IC5755C	Safety Features Actuation Panel		Rm. 505	
	0	IC5755D	Safety Features Actuation Panel		Rm. 505	
	0	IC5756C	Safety Features Actuation Panel		Rm. 505	
	0	IC5756D	Safety Features Actuation Panel		Rm. 505	
	0	IC5762C	Safety Features Actuation Panel		Rm. 505	
	0	IC5762D	Safety Features Actuation Panel		Rm. 505	
	0	IC5763C	Safety Features Actuation Panel		Rm. 505	
	0	IC5763D	Safety Features Actuation Panel		Rm. 505	
	0	LT1525A	Level Transmitter		BWST. Yard	
	0	LT1525B	Level Transmitter		BWST. Yard	
	0	LT1525C	Level Transmitter		BWST. Yard	
	0	LT1525D	Level Transmitter		BWST. Yard	
	0	PT2000	Pressure Transmitter		Rm. 404	

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## MASTER LIST

Index No: 219M-003  
Rev.: 2

## SAFETY FEATURES ACTUATION SYSTEM

Prepared by:

F Lewis

Date:

9/30/22

Checked by:

Wm. A. Hall

Date:

73008

Worksheet Index No.	Rev.	Plant ID Number	Generic Name	LOCATION		REMARKS
				Inside Primary Containment	Outside Primary Containment	



Facility: Davis-Besse Unit 1  
Docket: 50-346

# SYSTEM COMPONENT EVALUATION WORKSHEET

Prepared by: N. Lewis  
Check by: [Signature]

Date: 11/1/83  
Date: 11/2/83

Index No.: 219H-004  
Rev.: 2

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: Safety Features Actuation	Operating Time	1 Year	1.19 Years	Note 2	J-10 Note 1 V-16A	Simultaneous Test	None
Plant ID No. PT2001	Temperature (°F)	267.0	314.0	C-501	J-10 V-16A	Simultaneous Test	None
Component: Pressure Transmitter	Pressure (PSIA)	15.61	73.0	C-501	J-10 V-16A	Simultaneous Test	None
Manufacturer: Foxboro	Relative Humidity (%)	100.0	100.0	A	J-10 V-16A	Simultaneous Test	None
Model Number: E11AH S/N 319-2422	Chemical Spray	N/A	N/A	N/A	N/A	N/A	None
Function: Transmits Pressure Signals	Radiation	$2.0 \times 10^2$ RADS	$7.6 \times 10^7$ RADS	T	V-16A J-6	Sequential Test	None
Accuracy: Spec: 1.0% Demon: 0.94%	Aging	40 Years	1.19 Years Note 4	I	CAL-74 Note 3	Analysis	None
Service: Containment Pressure Input to SFAS Channel 2 and Indication	Submergence	N/A	N/A	N/A	N/A	N/A	None
Location: Auxiliary Bldg. Rm. 501							
Flood Level Elev: N/A							
Above Flood Level: N/A							
Needed for:							
Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1  
Socket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 219H-004A  
Rev.: 2

Prepared by: N. Lewis Date: 11/1/83  
Checked by: [Signature] Date: 11/2/83

NOTES

.. According to Profile C-501, room conditions will return to ambient within 19 minutes and remain there for the duration of the accident and ensuing cooldown. At the completion of the 30-day LOCA simulation test, test conditions had returned to 150°F, 5 psig. This test exposed the transmitter to an overall more severe environment than that which would result from the postulated high energy line break. Since the transmitter remained operable throughout the test, it can be concluded that the transmitter will maintain functional operability during the short-term accident environment and the long-term cooldown at ambient conditions.

1. One-year operating time is used as a conservative maximum specification.

1. Materials evaluation conducted. Materials sensitive to radiation and/or thermal aging summarized on attached evaluation.

1. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated component will maintain functional operability in harsh environments.

The limiting material is the transmitter amplifier which has an aging life of 1.19/0.54 years at 104°F/120°F, respectively (Reference CAL-74). However, there is operating experience at Davis-Besse Unit 1 and in other nuclear plants to support a longer qualified life.

Although the 1.19/0.54 year qualified life is the best analytically supported life estimate, operating experience shows that a longer life is justified. The surveillance and maintenance program will detect age-related degradation and proper surveillance frequencies will be adjusted to ensure that no common mode aging failures predominate.

Facility: Davis-Besse Unit 1  
Docket: 50-346

COMPONENT MATERIALS EVALUATION SHEET

Index No. 219H-004B  
Rev.: 2

Prepared by: N. Lewis Date: 11/1/82  
Checked by: [Signature] Date: 11/2/82

Plant I.D. No.: PT2001  
Manufacturer: Foxboro

Component: Pressure Transmitter  
Model No.: ELLAH\*

		THERMAL AGING		RADIATION	
Parts List	Materials List	Qualification	Reference	Qualification	Reference
Cover	Aluminum 214	40 Years	AA	N/A	N/A
Screws and Nuts	Steel	40 Years	AA	N/A	N/A
Washers	Steel	40 Years	AA	N/A	N/A
Base Assembly	Cast Iron	40 Years	AA	N/A	N/A
Zero Shaft	Steel	40 Years	AA	N/A	N/A
Sleeve	Steel	40 Years	AA	N/A	N/A
Zero Coupling Assembly	Steel	40 Years	AA	N/A	N/A
Retaining Rings	Steel	40 Years	AA	N/A	N/A
Force Bar and Base Assembly	Steel	40 Years	AA	N/A	N/A
Junction Box	Cast Iron	40 Years	AA	N/A	N/A
Coupling	Stainless Steel	40 Years	AA	N/A	N/A
Brackets	Steel	40 Years	AA	N/A	N/A
Flexure Assemblies	Steel	40 Years	AA	N/A	N/A
Columns	Steel	40 Years	AA	N/A	N/A
Base	Cast Iron	40 Years	AA	N/A	N/A
Cover Plate Molding	Steel	40 Years	AA	N/A	N/A
Terminal Block Assembly	Steel	40 Years	AA	N/A	N/A
Detector Assembly	Steel	40 Years	AA	N/A	N/A
Plates	Steel	40 Years	AA	N/A	N/A
Level Assembly	Steel	40 Years	AA	N/A	N/A

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# COMPONENT MATERIALS EVALUATION SHEET

Prepared by: N. Lewis Date: 11/1/87  
Checked by: [Signature] Date: 11/2/87

Index No.: 219H-004C  
Rev.: 2

Plant I.D. No.: PT2001

Manufacturer: Foxboro

Component: Pressure Transmitter

Model No.: EllAH\*

Parts List	Materials List	THERMAL AGING		RADIATION	
		Qualification	Reference	Qualification	Reference
Blocks	Steel	40 Years	AA	N/A	
Lever	Steel	40 Years	AA	N/A	N/A
Clamp Spring	Steel	40 Years	AA	N/A	N/A
Bushings	Steel	40 Years	AA	N/A	N/A
Coil Assembly	Steel	40 Years	AA	N/A	N/A
Zero Screw Assembly	Steel	40 Years	AA	N/A	N/A
Spring Assemblies	Steel	40 Years	AA	N/A	N/A
Tubing	Steel	40 Years	AA	N/A	N/A
Clamps	Steel	40 Years	AA	N/A	N/A
Lubricant	Steel	40 Years	AA	N/A	N/A
Transmitter Amplifier	Silicone Oil	40 Years	AA	N/A	N/A
Assembly	Solid State Electronics	Not Affected	AA	N/A	N/A
O-Rings	Viton	1.19 Years @ 104°F	CAL-74	N/A	N/A
Nylon Washer	Nylon (Polyamide)	40 Years @ 265°F	CAL-74	N/A	N/A
Cable	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Insulator	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Sealant	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Force Motor Assembly	Silicone RTV (Silastic)	40 Years @ 302°F	CAL-74	N/A	N/A
Armature Assembly	Formvar Insulation	40 Years @ 122°F	CAL-74	N/A	N/A
Terminal Block	Formvar Insulation	40 Years @ 122°F	CAL-74	N/A	N/A
Column	Phenolic	40 Years @ 230°F	CAL-74	N/A	N/A
	Phenolic	40 Years @ 230°F	CAL-74	N/A	N/A

Materials & Parts List Reference : AA

\* The EllGH materials list is applicable to the EllAH and EllGM transmitters because these transmitters have identical topworks, junction box, and electronics.

Note 1: Conservative value based on the fact that the transmitter amplifier assembly is the most limiting component for thermal aging (see Reference AA, CAL-38).

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SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 219H-005  
Rev.: 2

Prepared by: N. Lewis Date: 11/1/83  
Checked by: [Signature] Date: 11/2/83

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: Safety Features Actuation	Operating Time	1 Year	1.19 Years	Note 2	J-10 Note 1 V-16A	Simultaneous Test	None
Plant ID No. PT2002	Temperature (°F)	249.0	314.0	C-500	J-10 V-16A	Simultaneous Test	None
Component: Pressure Transmitter	Pressure (PSIA)	15.61	78.0	C-500	J-10 V-16A	Simultaneous Test	None
Manufacturer: Foxboro	Relative Humidity (%)	100.0	100.0	A	J-10 V-16A	Simultaneous Test	None
Model Number: EllAH S/N 319-2423	Chemical Spray	N/A	N/A	N/A	N/A	N/A	None
Function: Transmits Pressure Signals	Radiation	$2.0 \times 10^2$ RADS	$7.6 \times 10^7$ RADS	T	V-16A J-6	Sequential Test	None
Accuracy: Spec: 1.0% Demon: 0.94%	Aging	40 Years	1.19 Years Note 4	I	CAL-74 Note 3	Analysis	None
Service: Containment Pressure Input to SFAS Channel 3 and Indication	Submergence	N/A	N/A	N/A	N/A	N/A	None
Location: Auxiliary Bldg. Rm. 500							
Flood Level Elev: N/A							
Above Flood Level: N/A							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							



Facility: Davis-Besse Unit 1  
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SYSTEM COMPONENT EVALUATION WORKSHEET

Index No. 219H-005A

Rev.: 2

NOTES

Prepared by: M. Lewis Date: 11/1/83  
Checked by: Edmund Date: 11/2/83

1. According to Profile C-500, room conditions will return to ambient within 19 minutes and remain there for the duration of the accident and ensuing cooldown. At the completion of the 30-day LOCA simulation test, test conditions had returned to 150°F, 5 psig. This test exposed the transmitter to an overall more severe environment than that which would result from the postulated high energy line break. Since the transmitter remained operable throughout the test, it can be concluded that the transmitter will maintain functional operability during the short-term accident environment and the long-term cooldown at ambient conditions.
2. One-year operating time is used as a conservative maximum specification.
3. Materials evaluation conducted. Materials sensitive to radiation and/or thermal aging summarized on attached evaluation.
4. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated component will maintain functional operability in harsh environments.

The limiting material is the transmitter amplifier which has an aging life of 1.19/0.54 years at 104°F/120°F, respectively (Reference CAL-74). However, there is operating experience at Davis-Besse Unit 1 and in other nuclear plants to support a longer qualified life.

Although the 1.19/0.54 year qualified life is the best analytically supported life estimate, operating experience shows that a longer life is justified. The surveillance and maintenance program will detect age-related degradation and proper surveillance frequencies will be adjusted to ensure that no common mode aging failures predominate.



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COMPONENT MATERIALS EVALUATION SHEET

Index No.: 219H-005B  
Rev.: 2

Prepared by: N. Levi Date: 11/1/93  
Checked by: [Signature] Date: 11/2/93

Plant I.D. No.: PT2002

Manufacturer: Foxboro

Component: Pressure Transmitter

Model No.: E11AH\*

Parts List	Materials List	THERMAL AGING		RADIATION	
		Qualification	Reference	Qualification	Reference
Cover	Aluminum 214	40 Years	AA	N/A	N/A
Screws and Nuts	Steel	40 Years	AA	N/A	N/A
Washers	Steel	40 Years	AA	N/A	N/A
Base Assembly	Cast Iron	40 Years	AA	N/A	N/A
Zero Shaft	Steel	40 Years	AA	N/A	N/A
Sleeve	Steel	40 Years	AA	N/A	N/A
Zero Coupling Assembly	Steel	40 Years	AA	N/A	N/A
Retaining Rings	Steel	40 Years	AA	N/A	N/A
Force Bar and Base Assembly	Steel	40 Years	AA	N/A	N/A
Junction Box	Cast Iron	40 Years	AA	N/A	N/A
Coupling	Stainless Steel	40 Years	AA	N/A	N/A
Brackets	Steel	40 Years	AA	N/A	N/A
Flexure Assemblies	Steel	40 Years	AA	N/A	N/A
Columns	Steel	40 Years	AA	N/A	N/A
Base	Cast Iron	40 Years	AA	N/A	N/A
Cover Plate Molding	Steel	40 Years	AA	N/A	N/A
Terminal Block Assembly	Steel	40 Years	AA	N/A	N/A
Detector Assembly	Steel	40 Years	AA	N/A	N/A
Plates	Steel	40 Years	AA	N/A	N/A
Level Assembly	Steel	40 Years	AA	N/A	N/A

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COMPONENT MATERIALS EVALUATION SHEET

Index No.: 219H-005C  
Rev.: 2

Prepared by:

*J. Lunn*  
*Radwell*

Date:

*11/1/92*  
*11/2/92*

Checked by:

Date:

Plant I.D. No.: PT2002

Manufacturer: Foxboro

Component: Pressure Transmitter

Model No.: EllAH\*

		THERMAL AGING		RADIATION	
Parts List	Materials List	Qualification	Reference	Qualification	Reference
Blocks	Steel	40 Years	AA	N/A	N/A
Lever	Steel	40 Years	AA	N/A	N/A
Clamp Spring	Steel	40 Years	AA	N/A	N/A
Bushings	Steel	40 Years	AA	N/A	N/A
Coil Assembly	Steel	40 Years	AA	N/A	N/A
Zero Screw Assembly	Steel	40 Years	AA	N/A	N/A
Spring Assemblies	Steel	40 Years	AA	N/A	N/A
Tubing	Steel	40 Years	AA	N/A	N/A
Clamps	Steel	40 Years	AA	N/A	N/A
Lubricant	Silicone Oil	Not Affected	AA	N/A	N/A
Transmitter Amplifier Assembly	Solid State Electronics	1.19 Years @ 104°F	CAL-74	N/A	N/A
O-Rings	Viton	40 Years @ 265°F	CAL-74	N/A	N/A
Nylon Washer	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Cable	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Insulator	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Sealant	Silicone RTV (Silastic)	40 Years @ 302°F	CAL-74	N/A	N/A
Force Motor Assembly	Formvar Insulation	40 Years @ 122°F	CAL-74	N/A	N/A
Armature Assembly	Formvar Insulation	40 Years @ 122°F	CAL-74	N/A	N/A
Terminal Block	Phenolic	40 Years @ 230°F	CAL-74	N/A	N/A
Column	Phenolic	40 Years @ 230°F	CAL-74	N/A	N/A

Materials & Parts List Reference: AA

\* The EllGH materials list is applicable to the EllAH and EllGM transmitters because these transmitters have identical topworks, junction box, and electronics.

Note 1: Conservative value based on the fact that the transmitter amplifier assembly is the most limiting component for thermal aging (see Reference AA, CAL-38).

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# SYSTEM COMPONENT EVALUATION WORKSHEET

Prepared by: N. Lewis Date: 11/1/83  
Checked by: L. Michael Date: 11/2/83

Index No.: 219H-006  
Rev.: 2

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: Safety Features Actuation	Operating Time	1 Year	1.19 Years	Note 1	J-6 CAL-38 V-16A	Analysis	None
Plant ID No. PT2003							
Component: Pressure Transmitter	Temperature (°F)	N/A	N/A	Note 2	N/A	N/A	None
Manufacturer: Foxboro							
Model Number: E11AH S/N 319-2424	Pressure (PSIA)	N/A	N/A	Note 2	N/A	N/A	None
Function: Transmits Pressure Signals	Relative Humidity (%)	N/A	N/A	Note 2	N/A	N/A	None
Accuracy: Spec: 1.0% Demon: 0.94%							
Service: Containment Pressure Input to SFAS Channel 4 and Indication	Chemical Spray	N/A	N/A	N/A	N/A	N/A	None
Location: Auxiliary Bldg. Rm. 426							
Flood Level Elev: N/A	Radiation	4.17 x 10 <sup>5</sup> RADS	7.6 x 10 <sup>7</sup> RADS	T	J-6 V-16A	Sequential Test	None
Above Flood Level: N/A							
Needed for:	Aging	40 Years	1.19 Years Note 4	I	CAL-74 Note 3	Analysis	None
Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>	Submergence	N/A	N/A	N/A	N/A	N/A	None

Facility: Davis-Besse Unit 1  
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SYSTEM COMPONENT EVALUATION WORKSHEET

Prepared by: N. Lewis  
Checked by: PT [signature]

Date: 11/1/83  
Date: 11/2/83

NOTES

Index No.: 219H-006A  
Rev.: 2

1. One-year operating time is used as a conservative maximum specification.
2. The only harsh environment seen is increased radiation due to recirculated fluids.
3. Materials evaluation conducted. Materials sensitive to radiation and/or thermal aging summarized on attached evaluation.
4. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated component will maintain functional operability in harsh environments.

The limiting material is the transmitter amplifier which has an aging life of 1.19/0.54 years at 104°F/120°F, respectively (Reference CAL-74). However, there is operating experience at Davis-Besse Unit 1 and in other nuclear plants to support a longer qualified life.

Although the 1.19/0.54 year qualified life is the best analytically supported life estimate, operating experience shows that a longer life is justified. The surveillance and maintenance program will detect age-related degradation and proper surveillance frequencies will be adjusted to ensure that no common mode aging failures predominate.

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COMPONENT MATERIALS EVALUATION SHEET

Index No.: 219H-006B  
Rev.: 2

Prepared by: N. Lewis Date: 11/1/83  
Checked by: [Signature] Date: 11/2/83

Plant I.D. No.: PT2003  
Manufacturer: Foxboro

Component: Pressure Transmitter  
Model No.: E11AH\*

Parts List	Materials List	THERMAL AGING		RADIATION	
		Qualification	Reference	Qualification	Reference
Cover	Aluminum 214	40 Years	AA	N/A	N/A
Screws and Nuts	Steel	40 Years	AA	N/A	N/A
Washers	Steel	40 Years	AA	N/A	N/A
Base Assembly	Cast Iron	40 Years	AA	N/A	N/A
Zero Shaft	Steel	40 Years	AA	N/A	N/A
Sleeve	Steel	40 Years	AA	N/A	N/A
Zero Coupling Assembly	Steel	40 Years	AA	N/A	N/A
Retaining Rings	Steel	40 Years	AA	N/A	N/A
Force Bar and Base	Steel	40 Years	AA	N/A	N/A
Assembly		40 Years	AA	N/A	N/A
Junction Box	Cast Iron	40 Years	AA	N/A	N/A
Coupling	Stainless Steel	40 Years	AA	N/A	N/A
Brackets	Steel	40 Years	AA	N/A	N/A
Flexure Assemblies	Steel	40 Years	AA	N/A	N/A
Columns	Steel	40 Years	AA	N/A	N/A
Base	Cast Iron	40 Years	AA	N/A	N/A
Cover Plate Molding	Steel	40 Years	AA	N/A	N/A
Terminal Block Assembly	Steel	40 Years	AA	N/A	N/A
Detector Assembly	Steel	40 Years	AA	N/A	N/A
Plates	Steel	40 Years	AA	N/A	N/A
Level Assembly	Steel	40 Years	AA	N/A	N/A



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COMPONENT MATERIALS EVALUATION SHEET

Index No.: 219H-006C  
Rev.: 2

Prepared by: J. L. L... Date: 11/1/82  
Checked by: B. J. L... Date: 11/2/82

Plant I.D. No.: PT2003  
Manufacturer: Foxboro

Component: Pressure Transmitter  
Model No.: E11AH\*

Parts List	Materials List	THERMAL AGING		RADIATION	
		Qualification	Reference	Qualification	Reference
Blocks	Steel	40 Years	AA	N/A	N/A
Lever	Steel	40 Years	AA	N/A	N/A
Clamp Spring	Steel	40 Years	AA	N/A	N/A
Bushings	Steel	40 Years	AA	N/A	N/A
Coil Assembly	Steel	40 Years	AA	N/A	N/A
Zero Screw Assembly	Steel	40 Years	AA	N/A	N/A
Spring Assemblies	Steel	40 Years	AA	N/A	N/A
Tubing	Steel	40 Years	AA	N/A	N/A
Clamps	Steel	40 Years	AA	N/A	N/A
Lubricant	Silicone Oil	Not Affected	AA	N/A	N/A
Transmitter Amplifier Assembly	Solid State Electronics	1.19 Years @ 104°F	CAL-74	N/A	N/A
O-Rings	Viton	40 Years @ 265°F	CAL-74	N/A	N/A
Nylon Washer	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Cable	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Insulator	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Sealant	Silicone RTV (Silastic)	40 Years @ 302°F	CAL-74	N/A	N/A
Force Motor Assembly	Formvar Insulation	40 Years @ 122°F	CAL-74	N/A	N/A
Armature Assembly	Formvar Insulation	40 Years @ 122°F	CAL-74	N/A	N/A
Terminal Block	Phenolic	40 Years @ 230°F	CAL-74	N/A	N/A
Column	Phenolic	40 Years @ 230°F	CAL-74	N/A	N/A

Materials & Parts List Reference: AA

\* The E11GH materials list is applicable to the E11AH and E11GM transmitters because these transmitters have identical topworks, junction box, and electronics.

Note 1: Conservative value based on the fact that the transmitter amplifier assembly is the most limiting component for thermal aging (see Reference AA, CAL-38).



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cket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 219H-007  
Rev.: 2

epared by: N. Lewis Date: 11/1/83  
echecked by: W. McDonald Date: 11/2/83

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: Safety Features Actuation	Operating Time	1 Year	1.1 Years	Note 2	J-10 Note 1 V-16A	Simultaneous Test	None
Plant ID No. PTRC2A3	Temperature (°F)	283.0	314.0	H, X	J-10 V-16A	Simultaneous Test	None
Component: Pressure Transmitter	Pressure (PSIA)	52.0	78.0	G, X	J-10 V-16A	Simultaneous Test	None
Model Number: EllGH S/N 266-0831	Relative Humidity (%)	100.0	100.0	A	J-10 V-16A	Simultaneous Test	None
Function: Transmits Pressure Signals	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	J-10 V-16A CAL-40 Note 3	Simultaneous Test, Analysis	None
Accuracy: Spec: 1.0% Demon: 0.94%	Radiation	4.69 x 10 <sup>6</sup> RADS	1.0 x 10 <sup>7</sup> RADS	AF	J-5 V-16A	Sequential Test	None
Service: RC Loop 2 HLG Wide Range Pressure for FAS Ch. 4 and Indication	Aging	40 Years	0.54 Years Note 5	I	CAL-74 Note 4	Analysis	None
Location: Containment Rm. 410	Submergence	572' - 2"	606' - 0"	B	J-11	N/A	None
Loaded for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1  
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index # 219H-07A  
Rev.: 2

Prepared by: N Lewis Date: 11/1/83  
Checked by: [Signature] Date: 11/1/83

NOTES

1. According to Profiles G and H, containment conditions will return to ambient within seven days and remain there for the duration of the accident and ensuing cooldown. At the completion of the 30-day LOCA simulation test, test conditions had returned to 150°F, 5 psig. This test exposed the transmitter to an overall more severe environment than that which would result from the postulated loss of coolant accident. Since the transmitter remained operable throughout the test, it can be concluded that the transmitter will maintain functional operability during the short-term accident environment and the long-term cooldown at ambient conditions.
2. One-year operating time is used as a conservative maximum specification.
3. CAL-40 qualifies components tested in a high pH boric acid spray to a pH value of 5.
4. Materials evaluation conducted. Materials sensitive to radiation and/or thermal aging summarized on attached evaluation.
5. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated component will maintain functional operability in harsh environments.

The limiting material is the transmitter amplifier which has an aging life of 1.19/0.54 years at 104°F/120°F, respectively (Reference CAL-74). However, there is operating experience at Davis-Besse Unit 1 and in other nuclear plants to support a longer qualified life.

Although the 1.19/0.54 year qualified life is the best analytically supported life estimate, operating experience shows that a longer life is justified. The surveillance and maintenance program will detect age-related degradation and proper surveillance frequencies will be adjusted to ensure that no common mode aging failures predominate.

Facility: Davis-Besse Unit 1  
Docket: 50-346

COMPONENT MATERIALS EVALUATION SHEET

Index No.: 219H-007B  
Rev.: 2

Prepared by: N. Lewis Date: 11/1/83  
Checked by: Malone Date: 11/2/83

Plant I.D. No.: PTRC2A3

Component: Pressure Transmitter

Manufacturer: Foxboro

Model No.: E11GH\*

		THERMAL AGING		RADIATION	
Parts List	Materials List	Qualification	Reference	Qualification	Reference
Cover	Aluminum 214	40 Years	AA	N/A	N/A
Screws and Nuts	Steel	40 Years	AA	N/A	N/A
Washers	Steel	40 Years	AA	N/A	N/A
Base Assembly	Cast Iron	40 Years	AA	N/A	N/A
Zero Shaft	Steel	40 Years	AA	N/A	N/A
Sleeve	Steel	40 Years	AA	N/A	N/A
Zero Coupling Assembly	Steel	40 Years	AA	N/A	N/A
Retaining Rings	Steel	40 Years	AA	N/A	N/A
Force Bar and Base Assembly	Steel	40 Years	AA	N/A	N/A
Junction Box	Cast Iron	40 Years	AA	N/A	N/A
Coupling	Stainless Steel	40 Years	AA	N/A	N/A
Brackets	Steel	40 Years	AA	N/A	N/A
Flexure Assemblies	Steel	40 Years	AA	N/A	N/A
Columns	Steel	40 Years	AA	N/A	N/A
Base	Cast Iron	40 Years	AA	N/A	N/A
Cover Plate Molding	Steel	40 Years	AA	N/A	N/A
Terminal Block Assembly	Steel	40 Years	AA	N/A	N/A
Detector Assembly	Steel	40 Years	AA	N/A	N/A
Plates	Steel	40 Years	AA	N/A	N/A
Level Assembly	Steel	40 Years	AA	N/A	N/A

Facility: Davis-Besse Unit 1

Docket: 50-346

## COMPONENT MATERIALS EVALUATION SHEET

Index No.: 219H-007C

Rev.: 2

Prepared by:

*N. Lewis*

Date:

*11/1/82*

Checked by:

*E. Marshall*

Date:

*11/2/82*

Plant I.D. No.: PTRC2A3

Component: Pressure Transmitter

Manufacturer: Foxboro

Model No.: EllGH\*

		THERMAL AGING		RADIATION	
Parts List	Materials List	Qualification	Reference	Qualification	Reference
Blocks	Steel	40 Years	AA	N/A	N/A
Lever	Steel	40 Years	AA	N/A	N/A
Clamp Spring	Steel	40 Years	AA	N/A	N/A
Bushings	Steel	40 Years	AA	N/A	N/A
Coil Assembly	Steel	40 Years	AA	N/A	N/A
Zero Screw Assembly	Steel	40 Years	AA	N/A	N/A
Spring Assemblies	Steel	40 Years	AA	N/A	N/A
Tubing	Steel	40 Years	AA	N/A	N/A
Clamps	Steel	40 Years	AA	N/A	N/A
Lubricant	Silicone Oil	Not Sensitive	AA	N/A	N/A
Transmitter Amplifier Assembly	Solid State Electronics	0.54 Years @ 120°F	CAL-74	N/A	N/A
O-Rings	Viton	40 Years @ 265°F	CAL-74	N/A	N/A
Nylon Washer	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Cable	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Insulator	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Sealant	Silicone RTV (Silastic)	40 Years @ 302°F	CAL-74	N/A	N/A
Force Motor Assembly	Formvar Insulation	40 Years @ 122°F	CAL-74	N/A	N/A
Armature Assembly	Formvar Insulation	40 Years @ 122°F	CAL-74	N/A	N/A
Terminal Block	Phenolic	40 Years @ 230°F	CAL-74	N/A	N/A
Column	Phenolic	40 Years @ 230°F	CAL-74	N/A	N/A

Materials &amp; Parts List Reference: AA

\* The EllGH materials list is applicable to the EllAH and EllGM transmitters because these transmitters have identical topworks, junction box, and electronics.

Note 1: Conservative value based on the fact that the transmitter amplifier assembly is the most limiting component for thermal aging (see Reference AA, CAL-38).

Facility: Davis-Besse Unit 1  
Docket: 50-346

# SYSTEM COMPONENT EVALUATION WORKSHEET

Prepared by: H. Lewis  
Checked by: Michael

Date: 11/1/81  
Date: 11/2/81

Index No.: 219H-008  
Rev.: 2

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: Safety Features Actuation	Operating Time	1 Year	1.1 Years	Note 2	J-10 Note 1 V-16A	Simultaneous Test	None
Plant ID No. PTRC2A4	Temperature (°F)	283.0	314.0	H, X	J-10 V-16A	Simultaneous Test	None
Component: Pressure Transmitter	Pressure (PSIA)	52.0	78.0	G, X	J-10 V-16A	Simultaneous Test	None
Manufacturer: Foxboro	Relative Humidity (%)	100.0	100.0	A	J-10 V-16A	Simultaneous Test	None
Model Number: E11GH S/N 266-0832	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	J-10 V-16A CAL-40 Note 3	Simultaneous Test, Analysis	None
Function: Transmits Pressure Signals	Radiation	$4.60 \times 10^6$ RADS	$1.0 \times 10^7$ RADS	AF	J-5 V-16A	Sequential Test	None
Accuracy: Spec: 1.0% Demon: 0.94%	Aging	40 Years	0.54 Years Note 5	I	CAL-74 Note 4	Analysis	None
Service: RC Loop 2 HLG Wide Range Pressure for SFAS Ch. 2 and Indication	Submergence	572' - 2"	606' - 0"	B	J-11	N/A	None
Location: Containment Rm. 410							
Flood Level Elev: 572'-2"							
Above Flood Level: Yes							
Needed for:							
Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							



Facility: Davis-Besse Unit 1  
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 219H-09A  
Rev.: 2

Prepared by: N. Lewis Date: 11/1/83  
Checked by: [Signature] Date: 11/2/83

NOTES

1. According to Profiles G and H, containment conditions will return to ambient within seven days and remain there for the duration of the accident and ensuing cooldown. At the completion of the 30-day LOCA simulation test, test conditions had returned to 150°F, 5 psig. This test exposed the transmitter to an overall more severe environment than that which would result from the postulated loss of coolant accident. Since the transmitter remained operable throughout the test, it can be concluded that the transmitter will maintain functional operability during the short-term accident environment and the long-term cooldown at ambient conditions.
2. One-year operating time is used as a conservative maximum specification.
3. CAL-40 qualifies components tested in a high pH boric acid spray to a pH value of 5.
4. Materials evaluation conducted. Materials sensitive to radiation and/or thermal aging summarized on attached evaluation.
5. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated component will maintain functional operability in harsh environments.

The limiting material is the transmitter amplifier which has an aging life of 1.19/0.54 years at 104°F/120°F, respectively (Reference CAL-74). However, there is operating experience at Davis-Besse Unit 1 and in other nuclear plants to support a longer qualified life.

Although the 1.19/0.54 year qualified life is the best analytically supported life estimate, operating experience shows that a longer life is justified. The surveillance and maintenance program will detect age-related degradation and proper surveillance frequencies will be adjusted to ensure that no common mode aging failures predominate.



Facility: Davis-Besse Unit 1  
Docket: 50-346

COMPONENT MATERIALS EVALUATION SHEET

Prepared by: N. Levin

Date: 11/1/83

Checked by: [Signature]

Date: 11/2/83

Index No.: 219H-008B

Rev.: 2

Plant I.D. No.: PTRC2A4

Manufacturer: Foxboro

Component: Pressure Transmitter

Model No.: E11GH\*

Parts List	Materials List	THERMAL AGING		RADIATION	
		Qualification	Reference	Qualification	Reference
Cover	Aluminum 214	40 Years			
Screws and Nuts	Steel	40 Years	AA	N/A	
Washers	Steel	40 Years	AA	N/A	N/A
Base Assembly	Cast Iron	40 Years	AA	N/A	N/A
Zero Shaft	Steel	40 Years	AA	N/A	N/A
Sleeve	Steel	40 Years	AA	N/A	N/A
Zero Coupling Assembly	Steel	40 Years	AA	N/A	N/A
Retaining Rings	Steel	40 Years	AA	N/A	N/A
Force Bar and Base	Steel	40 Years	AA	N/A	N/A
Assembly	Steel	40 Years	AA	N/A	N/A
Junction Box		40 Years	AA	N/A	N/A
Coupling	Cast Iron			N/A	N/A
Brackets	Stainless Steel	40 Years	AA	N/A	N/A
Flexure Assemblies	Steel	40 Years	AA	N/A	N/A
Columns	Steel	40 Years	AA	N/A	N/A
Base	Steel	40 Years	AA	N/A	N/A
Cover Plate Molding	Cast Iron	40 Years	AA	N/A	N/A
Terminal Block Assembly	Steel	40 Years	AA	N/A	N/A
Detector Assembly	Steel	40 Years	AA	N/A	N/A
Plates	Steel	40 Years	AA	N/A	N/A
Level Assembly	Steel	40 Years	AA	N/A	N/A
		40 Years	AA	N/A	N/A

Facility: Davis-Besse Unit 1  
Docket: 50-346

COMPONENT MATERIALS EVALUATION SHEET

Prepared by: N Lewis Date: 11/1/83  
Checked by: [Signature] Date: 11/2/83

Index No.: 219H-008C  
Rev.: 2

Plant I.D. No.: PTRC2A4

Manufacturer: Foxboro

Component: Pressure Transmitter

Model No.: EllGH\*

Parts List	Materials List	THERMAL AGING		RADIATION	
		Qualification	Reference	Qualification	Reference
Blocks	Steel	40 Years	AA	N/A	N/A
Lever	Steel	40 Years	AA	N/A	N/A
Clamp Spring	Steel	40 Years	AA	N/A	N/A
Bushings	Steel	40 Years	AA	N/A	N/A
Coil Assembly	Steel	40 Years	AA	N/A	N/A
Zero Screw Assembly	Steel	40 Years	AA	N/A	N/A
Spring Assemblies	Steel	40 Years	AA	N/A	N/A
Tubing	Steel	40 Years	AA	N/A	N/A
Clamps	Steel	40 Years	AA	N/A	N/A
Lubricant	Steel	40 Years	AA	N/A	N/A
Transmitter Amplifier	Silicone Oil	40 Years	AA	N/A	N/A
Assembly	Solid State Electronics	Not Sensitive	AA	N/A	N/A
O-Rings	Viton	0.54 Years @ 120°F	CAL-74	N/A	N/A
Nylon Washer	Nylon (Polyamide)	40 Years @ 265°F	CAL-74	N/A	N/A
Cable	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Insulator	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Sealant	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Force Motor Assembly	Silicone RTV (Silastic)	40 Years @ 302°F	CAL-74	N/A	N/A
Armature Assembly	Formvar Insulation	40 Years @ 122°F	CAL-74	N/A	N/A
Terminal Block	Formvar Insulation	40 Years @ 122°F	CAL-74	N/A	N/A
Column	Phenolic	40 Years @ 230°F	CAL-74	N/A	N/A
	Phenolic	40 Years @ 230°F	CAL-74	N/A	N/A

Materials & Parts List Reference: AA

\* The EllGH materials list is applicable to the EllAH and EllGM transmitters because these transmitters have identical topworks, junction box, and electronics.

Note 1: Conservative value based on the fact that the transmitter amplifier assembly is the most limiting component for thermal aging (see Reference AA, CAL-38).

Facility: Davis-Besse Unit 1  
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 219H-009  
Rev.: 2

Prepared by: N Lewis Date: 11/1/83  
Checked by: Linda Smith Date: 11/2/83

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: Safety Features Actuation	Operating Time	1 Year	1.1 Years	Note 2	J-10 Note 1 V-16A	Simultaneous Test	None
Plant ID No. PTRC2B3	Temperature (°F)	283.0	314.0	H, X	J-10 V-16A	Simultaneous Test	None
Component: Pressure Transmitter	Pressure (PSIA)	52.0	78.0	G, X	J-10 V-16A	Simultaneous Test	None
Manufacturer: Foxboro	Relative Humidity (%)	100.0	100.0	A	J-10 V-16A	Simultaneous Test	None
Model Number: EllGH S/N 266-0832	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	J-10 V-16A CAL-40 Note 3	Simultaneous Test, Analysis	None
Function: Transmits Pressure Signals	Radiation	5.44 x 10 <sup>6</sup> RADS	1.0 x 10 <sup>7</sup> RADS	AF	J-5 V-16A	Sequential Test	None
Accuracy: Spec: 1.0% Demon: 0.94%	Aging	40 Years	0.54 Years Note 5	I	CAL-74 Note 4	Analysis	None
Service: RC Loop 1 HLG Wide Range Pressure for SFAS Ch. 3 and Indication	Submergence	572' - 2"	606' - 0"	B	J-11	N/A	None
Location: Containment Rm. 407							
Flood Level Elev: 572'-2"							
Above Flood Level: Yes							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1  
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 219H-009A  
Rev.: 2

NOTES

Prepared by: N. Lewis Date: 11/1/83  
Checked by: J. Baker Date: 11/1/83

1. According to Profiles G and H, containment conditions will return to ambient within seven days and remain there for the duration of the accident and ensuing cooldown. At the completion of the 30-day LOCA simulation test, test conditions had returned to 150°F, 5 psig. This test exposed the transmitter to an overall more severe environment than that which would result from the postulated loss of coolant accident. Since the transmitter remained operable throughout the test, it can be concluded that the transmitter will maintain functional operability during the short-term accident environment and the long-term cooldown at ambient conditions.
2. One-year operating time is used as a conservative maximum specification.
3. CAL-40 qualifies components tested in a high pH boric acid spray to a pH value of 5.
4. Materials evaluation conducted. Materials sensitive to radiation and/or thermal aging summarized on attached evaluation.
5. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated component will maintain functional operability in harsh environments.

The limiting material is the transmitter amplifier which has an aging life of 1.19/0.54 years at 104°F/120°F, respectively (Reference CAL-74). However, there is operating experience at Davis-Besse Unit 1 and in other nuclear plants to support a longer qualified life.

Although the 1.19/0.54 year qualified life is the best analytically supported life estimate, operating experience shows that a longer life is justified. The surveillance and maintenance program will detect age-related degradation and proper surveillance frequencies will be adjusted to ensure that no common mode aging failures predominate.

Facility: Davis-Besse Unit 1  
Docket: 50-346

COMPONENT MATERIALS EVALUATION SHEET

Index No.: 219H-009B  
Rev.: 2

Prepared by: N Lewis Date: 11/1/83  
Checked by: [Signature] Date: 11/2/83

Plant I.D. No.: PTRC2B3  
Manufacturer: Foxboro

Component: Pressure Transmitter  
Model No.: ELLGH\*

Parts List	Materials List	THERMAL AGING		RADIATION	
		Qualification	Reference	Qualification	Reference
Cover	Aluminum 214	40 Years	AA	N/A	N/A
Screws and Nuts	Steel	40 Years	AA	N/A	N/A
Washers	Steel	40 Years	AA	N/A	N/A
Base Assembly	Cast Iron	40 Years	AA	N/A	N/A
Zero Shaft	Steel	40 Years	AA	N/A	N/A
Sleeve	Steel	40 Years	AA	N/A	N/A
Zero Coupling Assembly	Steel	40 Years	AA	N/A	N/A
Retaining Rings	Steel	40 Years	AA	N/A	N/A
Force Bar and Base	Steel	40 Years	AA	N/A	N/A
Assembly			AA	N/A	N/A
Junction Box	Cast Iron	40 Years	AA	N/A	N/A
Coupling	Stainless Steel	40 Years	AA	N/A	N/A
Brackets	Steel	40 Years	AA	N/A	N/A
Flexure Assemblies	Steel	40 Years	AA	N/A	N/A
Columns	Steel	40 Years	AA	N/A	N/A
Base	Cast Iron	40 Years	AA	N/A	N/A
Cover Plate Molding	Steel	40 Years	AA	N/A	N/A
Terminal Block Assembly	Steel	40 Years	AA	N/A	N/A
Detector Assembly	Steel	40 Years	AA	N/A	N/A
Plates	Steel	40 Years	AA	N/A	N/A
Level Assembly	Steel	40 Years	AA	N/A	N/A

Facility: Davis-Besse Unit 1  
Docket: 50-346

COMPONENT MATERIALS EVALUATION SHEET

Index No.: 219H-009C  
Rev.: 2

Prepared by: N Lewis Date: 11/1/83  
Checked by: [Signature] Date: 11/2/83

Plant I.D. No.: PTRC2B3

Manufacturer: Foxboro

Component: Pressure Transmitter

Model No.: EllGH\*

Parts List	Materials List	THERMAL AGING		RADIATION	
		Qualification	Reference	Qualification	Reference
Blocks	Steel	40 Years	AA	N/A	N/A
Lever	Steel	40 Years	AA	N/A	N/A
Clamp Spring	Steel	40 Years	AA	N/A	N/A
Bushings	Steel	40 Years	AA	N/A	N/A
Coil Assembly	Steel	40 Years	AA	N/A	N/A
Zero Screw Assembly	Steel	40 Years	AA	N/A	N/A
Spring Assemblies	Steel	40 Years	AA	N/A	N/A
Tubing	Steel	40 Years	AA	N/A	N/A
Clamps	Steel	40 Years	AA	N/A	N/A
Lubricant	Silicone Oil	40 Years	AA	N/A	N/A
Transmitter Amplifier	Solid State Electronics	Not Sensitive	AA	N/A	N/A
Assembly		0.54 Years @ 120°F	CAL-74	N/A	N/A
O-Rings	Viton	40 Years @ 265°F	CAL-74	N/A	N/A
Nylon Washer	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Cable	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Insulator	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Sealant	Silicone RTV (Silastic)	40 Years @ 302°F	CAL-74	N/A	N/A
Force Motor Assembly	Formvar Insulation	40 Years @ 122°F	CAL-74	N/A	N/A
Armature Assembly	Formvar Insulation	40 Years @ 122°F	CAL-74	N/A	N/A
Terminal Block	Phenolic	40 Years @ 230°F	CAL-74	N/A	N/A
Column	Phenolic	40 Years @ 230°F	CAL-74	N/A	N/A

Materials & Parts List Reference: AA

\* The EllGH materials list is applicable to the EllAH and EllGM transmitters because these transmitters have identical topworks, junction box, and electronics.

Note 1: Conservative value based on the fact that the transmitter amplifier assembly is the most limiting component for thermal aging (see Reference AA, CAL-38).



Facility: Davis-Besse Unit 1  
Docket: 50-346

# SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 219H-010  
Rev.: 2

Prepared by: N Lewis Date: 11/1/83  
Checked by: Handal Date: 11/2/83

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: Safety Features Actuation	Operating Time	1 Year	1.1 Years	Note 2	J-10 Note 1 V-16A	Simultaneous Test	None
Plant ID No. PTRC2B4	Temperature (°F)	283.0	314.0	H, X	J-10 V-16A	Simultaneous Test	None
Component: Pressure Transmitter	Pressure (PSIA)	52.0	78.0	G, X	J-10 V-16A	Simultaneous Test	None
Manufacturer: Foxboro	Relative Humidity (%)	100.0	100.0	A	J-10 V-16A	Simultaneous Test	None
Model Number: EllGH S/N 266-0834	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0 Note 3	A	J-10 V-16A CAL-40 Note 3	Simultaneous Test, Analysis	None
Function: Transmits Pressure Signals	Radiation	4.89 x 10 <sup>6</sup> RADS	1.0 x 10 <sup>7</sup> RADS	AF	J-5 V-16A	Sequential Test	None
Accuracy: Spec: 1.0% Demon: 0.94%	Aging	40 Years	0.54 Years Note 5	I	CAL-74 Note 4	Analysis	None
Service: RC Loop 1 HLG Wide Range Pressure for SFAS Ch. 1 and Indication	Submergence	572' - 2"	606' - 0"	B	J-11	N/A	None
Location: Containment Rm. 407							
Flood Level Elev: 572'-2"							
Above Flood Level: Yes							
Needed for:							
Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1  
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Prepared by: N Lewis  
Checked by: SanDrell

Date: 11/1/83  
Date: 11/2/83

NOTES

Index No.: 219H-010A  
Rev.: 2

1. According to Profiles G and H, containment conditions will return to ambient within seven days and remain there for the duration of the accident and ensuing cooldown. At the completion of the 30-day LOCA simulation test, test conditions had returned to 150°F, 5 psig. This test exposed the transmitter to an overall more severe environment than that which would result from the postulated loss of coolant accident. Since the transmitter remained operable throughout the test, it can be concluded that the transmitter will maintain functional operability during the short-term accident environment and the long-term cooldown at ambient conditions.
2. One-year operating time is used as a conservative maximum specification.
3. CAL-40 qualifies components tested in a high pH boric acid spray to a pH value of 5.
4. Materials evaluation conducted. Materials sensitive to radiation and/or thermal aging summarized on attached evaluation.
5. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated component will maintain functional operability in harsh environments.

The limiting material is the transmitter amplifier which has an aging life of 1.19/0.54 years at 104°F/120°F, respectively (Reference CAL-74). However, there is operating experience at Davis-Besse Unit 1 and in other nuclear plants to support a longer qualified life.

Although the 1.19/0.54 year qualified life is the best analytically supported life estimate, operating experience shows that a longer life is justified. The surveillance and maintenance program will detect age-related degradation and proper surveillance frequencies will be adjusted to ensure that no common mode aging failures predominate.

Facility: Davis-Besse Unit 1  
Docket: 50-346

COMPONENT MATERIALS EVALUATION SHEET

Prepared by: N Lewis Date: 11/1/83  
Checked by: [Signature] Date: 11/2/83

Index No.: 219H-010B  
Rev.: 2

Plant I.D. No.: PTRC2B4

Manufacturer: Foxboro

Component: Pressure Transmitter

Model No.: EllGH\*

Parts List	Materials List	THERMAL AGING		RADIATION	
		Qualification	Reference	Qualification	Reference
Cover	Aluminum 214	40 Years	AA	N/A	N/A
Screws and Nuts	Steel	40 Years	AA	N/A	N/A
Washers	Steel	40 Years	AA	N/A	N/A
Base Assembly	Cast Iron	40 Years	AA	N/A	N/A
Zero Shaft	Steel	40 Years	AA	N/A	N/A
Sleeve	Steel	40 Years	AA	N/A	N/A
Zero Coupling Assembly	Steel	40 Years	AA	N/A	N/A
Retaining Rings	Steel	40 Years	AA	N/A	N/A
Force Bar and Base	Steel	40 Years	AA	N/A	N/A
Assembly	Steel	40 Years	AA	N/A	N/A
Junction Box	Cast Iron	40 Years	AA	N/A	N/A
Coupling	Stainless Steel	40 Years	AA	N/A	N/A
Brackets	Steel	40 Years	AA	N/A	N/A
Flexure Assembly	Steel	40 Years	AA	N/A	N/A
Columns	Steel	40 Years	AA	N/A	N/A
Base	Cast Iron	40 Years	AA	N/A	N/A
Cover Plate Molding	Steel	40 Years	AA	N/A	N/A
Terminal Block Assembly	Steel	40 Years	AA	N/A	N/A
Detector Assembly	Steel	40 Years	AA	N/A	N/A
Plates	Steel	40 Years	AA	N/A	N/A
Level Assembly	Steel	40 Years	AA	N/A	N/A

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COMPONENT MATERIALS EVALUATION SHEET

Index No.: 219H-010C  
Rev.: 2

Prepared by: N. Lewis  
Checked by: [Signature]

Date: 11/1/83  
Date: 11/2/83

Plant I.D. No.: PTRC2B4  
Manufacturer: Foxboro

Component: Pressure Transmitter  
Model No.: EllGH\*

Parts List	Materials List	THERMAL AGING		RADIATION	
		Qualification	Reference	Qualification	Reference
Blocks	Steel	40 Years	AA	N/A	N/A
Lever	Steel	40 Years	AA	N/A	N/A
Clamp Spring	Steel	40 Years	AA	N/A	N/A
Bushings	Steel	40 Years	AA	N/A	N/A
Coil Assembly	Steel	40 Years	AA	N/A	N/A
Zero Screw Assembly	Steel	40 Years	AA	N/A	N/A
Spring Assemblies	Steel	40 Years	AA	N/A	N/A
Tubing	Steel	40 Years	AA	N/A	N/A
Clamps	Steel	40 Years	AA	N/A	N/A
Lubricant	Silicone Oil	Not Sensitive	AA	N/A	N/A
Transmitter Amplifier Assembly	Solid State Electronics	0.54 Years @ 120°F	CAL-74	N/A	N/A
O-Rings	Viton	40 Years @ 265°F	CAL-74	N/A	N/A
Nylon Washer	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Cable	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Insulator	Nylon (Polyamide)	96 Years @ 120°F	CAL-74	N/A	N/A
Sealant	Silicone RTV (Silastic)	40 Years @ 302°F	CAL-74	N/A	N/A
Force Motor Assembly	Formvar Insulation	40 Years @ 122°F	CAL-74	N/A	N/A
Armature Assembly	Formvar Insulation	40 Years @ 122°F	CAL-74	N/A	N/A
Terminal Block	Phenolic	40 Years @ 230°F	CAL-74	N/A	N/A
Column	Phenolic	40 Years @ 230°F	CAL-74	N/A	N/A

Materials & Parts List Reference: AA

\* The EllGH materials list is applicable to the EllAH and EllGM transmitters because these transmitters have identical topworks, junction box, and electronics.

Note 1: Conservative value based on the fact that the transmitter amplifier assembly is the most limiting component for thermal aging (see Reference AA, CAL-38).

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# SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 219H-011  
Rev.: 0

Prepared by: John T. Abbate Date: 9/20/81  
Checked by: Kenneth D. Morley Date: 9/28/81

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: Safety Features Actuation	Operating Time	26 Hours	N/A	F	Note 3	N/A	None
Plant ID No. RE2000	Temperature (°F)	109.0	Exempt	C-Annulus	Note 1	N/A	None
Component: Radiation Detector	Pressure (PSIA)	15.32	Exempt	C-Annulus	Note 1	N/A	None
Manufacturer: Victoreen	Relative Humidity (%)	100.0	Exempt	A	Note 1	N/A	None
Model Number: 845	Chemical Spray	N/A	N/A	N/A	N/A	N/A	None
Function: Radiation Detection	Radiation	1.7 x 10 <sup>7</sup> RADS	Exempt	CAL-44	Note 2	N/A	None
Accuracy: Spec: N/A Demon: N/A	Aging	40 Years	N/A	I	Note 3	N/A	None
Service: Input to SFAS	Submergence	N/A	N/A	N/A	N/A	N/A	None
Location: Annulus El. 585'							
Flood Level Elev: N/A							
Above Flood Level: N/A							
Needed for:							
Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input type="checkbox"/>							



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SYSTEM COMPONENT EVALUATION WORKSHEET

Index 219E-011A  
Rev.: 0

NOTES

Prepared by: John T. Allstate Date: 9/28/81  
Checked by: Kenneth A. Moody Date: 9/28/81

1. This radiation detector provides an input into the safety features actuation system. The only safety-related function performed by this detector is the initiation of the SFAS upon measuring high radiation levels resulting from a fueling accident or a LOCA. The detector is exempt from qualification because it does not perform a safety-related function in the harsh steam environment caused by a high energy line break. Failure of the detector in this environment (along with a similar failure of one of the other three detectors) may initiate the safety features actuation system on a high containment radiation initialing signal. This unlikely SFAS initiation would have the following results:

- a. Initiation of the emergency ventilation system (EVS).
- b. Closure of ECCS Room Isolation Dampers.
- c. Closure of the containment air sample isolation valves.
- d. Closure of the Containment and Penetration Room purge isolation valves.
- e. Stops Control Room normal HVAC units.

These actions will not degrade other safety-related functions because they do not interfere with the mitigation of a HELB. Initiation of the EVS will merely result in the control of a negative pressure boundary in the Annulus and Penetration Rooms. Closure of the ECCS Room's isolation dampers is of little concern because the equipment located in these rooms that is needed to mitigate the high energy line break (HPI pumps), will perform their function. Closure of the containment air sample valves is unimportant because it is unnecessary to sample containment air during a HELB. The purge valves are normally closed during plant operation and the purge system is only needed in the mitigation of a LOCA. The Control Room emergency HVAC units may be initiated in the event that the normal units stop.

Upon the unlikely occurrence of these events, the operator would be aware of the SFAS initiation from the indicating lights on the engineering safety features panel. He may override any of these SFAS actions from the Control Room.

2. This radiation detector is exempt from qualification because its main function is to monitor containment radiation levels during re-fueling. The detectors, which are located in the annulus, are moved inside the containment during re-fueling operations. They will initiate the safety features actuation system upon sensing high radiation levels that may result from a fueling accident.

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SYSTEM COMPONENT EVALUATION WORKSHEET

Index 219H-011B  
Rev.: 0

NOTES

Prepared by: John T. Ruffalo Date: 7/28/81  
Checked by: Kenneth W. Moody Date: 9/28/81

During normal plant operations, these SFAS detectors will also initiate the safety features actuation system upon sensing high radiation. In the event of a loss of coolant accident, SFAS will be initiated by either a low reactor coolant pressure signal or a high containment vessel pressure signal. These signals will initiate SFAS before initiation would occur due to high radiation levels. Because of this, failure of the detectors, in the accident environment, will not degrade safety-related functions. The operator will not be misled by detector failure because he will determine containment radiation levels by post-accident sampling.

3. Since these components are not required to operate during the postulated accidents, operating time and thermal aging qualification is not applicable.

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# SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 219H-012  
Rev.: 0

Prepared by: John T. Allstate Date: 9/28/81  
Checked by: Rennett A. Mandy Date: 9/28/81

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: Safety Features Actuation	Operating Time	26 Hours	N/A	F	Note 3	N/A	None
Plant ID No. RE2005							
Component: Radiation Detector	Temperature (°F)	109.0	Exempt	C-Annulus	Note 1	N/A	None
Manufacturer: Victoreen							
Model Number: 845	Pressure (PSIA)	15.32	Exempt	C-Annulus	Note 1	N/A	None
Function: Radiation Detection							
Accuracy: Spec: N/A Demon: N/A	Relative Humidity (%)	100.0	Exempt	A	Note 1	N/A	None
Service: Input to SFAS							
Location: Annulus El. 585'	Chemical Spray	N/A	N/A	N/A	N/A	N/A	None
Flood Level Elev: N/A Above Flood Level: N/A							
Needed for:	Radiation	1.7 x 10 <sup>7</sup> RADS	Exempt	CAL-44	Note 2	N/A	None
Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input type="checkbox"/>	Aging	40 Years	N/A	I	Note 3	N/A	None
	Submergence	N/A	N/A	N/A	N/A	N/A	None

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SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 219H-012A  
Rev.: 0

NOTES

Prepared by: John T. Allate Date: 9/20/81  
Checked by: Kenneth D. Morry Date: 9/28/81

1. This radiation detector provides an input into the safety features actuation system. The only safety-related function performed by this detector is the initiation of the SFAS upon measuring high radiation levels resulting from a fueling accident or a LOCA. The detector is exempt from qualification because it does not perform a safety-related function in the harsh steam environment caused by a high energy line break. Failure of the detector in this environment (along with a similar failure of one of the other three detectors) may initiate the safety features actuation system on a high containment radiation initialing signal. This unlikely SFAS initiation would have the following results:
  - a. Initiation of the emergency ventilation system (EVS).
  - b. Closure of ECCS Room Isolation Dampers.
  - c. Closure of the containment air sample isolation valves.
  - d. Closure of the Containment and Penetration Room purge isolation valves.
  - e. Stops Control Room normal HVAC units.

These actions will not degrade other safety-related functions because they do not interfere with the mitigation of a HELB. Initiation of the EVS will merely result in the control of a negative pressure boundary in the Annulus and Penetration Rooms. Closure of the ECCS Room's isolation dampers is of little concern because the equipment located in these rooms that is needed to mitigate the high energy line break (HPI pumps), will perform their function. Closure of the containment air sample valves is unimportant because it is unnecessary to sample containment air during a HELB. The purge valves are normally closed during plant operation and the purge system is only needed in the mitigation of a LOCA. The Control Room emergency HVAC units may be initiated in the event that the normal units stop.

Upon the unlikely occurrence of these events, the operator would be aware of the SFAS initiation from the indicating lights on the engineering safety features panel. He may override any of these SFAS actions from the Control Room.

2. This radiation detector is exempt from qualification because its main function is to monitor containment radiation levels during re-fueling. The detectors, which are located in the annulus, are moved inside the containment during re-fueling operations. They will initiate the safety features actuation system upon sensing high radiation levels that may result from a fueling accident.

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NOTES

Prepared by: John E. Albata Date: 9/20/81  
Checked by: Kenneth N. Morley Date: 9/28/81

During normal plant operations, these SFAS detectors will also initiate the safety features actuation system upon sensing high radiation. In the event of a loss of coolant accident, SFAS will be initiated by either a low reactor coolant pressure signal or a high containment vessel pressure signal. These signals will initiate SFAS before initiation would occur due to high radiation levels. Because of this, failure of the detectors, in the accident environment, will not degrade safety-related functions. The operator will not be misled by detector failure because he will determine containment radiation levels by post-accident sampling.

3. Since these components are not required to operate during the postulated accidents, operating time and thermal aging qualification is not applicable.



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EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: Safety Features Actuation	Operating Time	26 Hours	N/A	F	Note 3	N/A	None
Plant ID No. RE2006	Temperature (°F)	109.0	Exempt	C-Annulus	Note 1	N/A	None
Component: Radiation Detector							
Manufacturer: Victoreen	Pressure (PSIA)	15.32	Exempt	C-Annulus	Note 1	N/A	None
Model Number: 845	Relative Humidity (%)	100.0	Exempt	A	Note 1	N/A	None
Function: Radiation Detection							
Accuracy: Spec: N/A Demon: N/A	Chemical Spray	N/A	N/A	N/A	N/A	N/A	None
Service: Input to SFAS							
Location: Annulus El. 585'	Radiation	1.7 x 10 <sup>7</sup> RADS	Exempt	CAL-44	Note 2	N/A	None
Flood Level Elev: N/A	Aging	40 Years	N/A	I	Note 3	N/A	None
Above Flood Level: N/A							
Needed for:	Submergence	N/A	N/A	N/A	N/A	N/A	None
Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input type="checkbox"/>							

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Rev.: 0

NOTES

Prepared by: John A. Allister Date: 9/16/81  
Checked by: Ernest D. Morley Date: 9/28/81

1. This radiation detector provides an input into the safety features actuation system. The only safety-related function performed by this detector is the initiation of the SFAS upon measuring high radiation levels resulting from a fueling accident or a LOCA. The detector is exempt from qualification because it does not perform a safety-related function in the harsh steam environment caused by a high energy line break. Failure of the detector in this environment (along with a similar failure of one of the other three detectors) may initiate the safety features actuation system on a high containment radiation initialing signal. This unlikely SFAS initiation would have the following results:

- a. Initiation of the emergency ventilation system (EVS).
- b. Closure of ECCS Room Isolation Dampers.
- c. Closure of the containment air sample isolation valves.
- d. Closure of the Containment and Penetration Room purge isolation valves.
- e. Stops Control Room normal HVAC units.

These actions will not degrade other safety-related functions because they do not interfere with the mitigation of a HELB. Initiation of the EVS will merely result in the control of a negative pressure boundary in the Annulus and Penetration Rooms. Closure of the ECCS Room's isolation dampers is of little concern because the equipment located in these rooms that is needed to mitigate the high energy line break (HPI pumps), will perform their function. Closure of the containment air sample valves is unimportant because it is unnecessary to sample containment air during a HELB. The purge valves are normally closed during plant operation and the purge system is only needed in the mitigation of a LOCA. The Control Room emergency HVAC units may be initiated in the event that the normal units stop.

Upon the unlikely occurrence of these events, the operator would be aware of the SFAS initiation from the indicating lights on the engineering safety features panel. He may override any of these SFAS actions from the Control Room.

2. This radiation detector is exempt from qualification because its main function is to monitor containment radiation levels during re-fueling. The detectors, which are located in the annulus, are moved inside the containment during re-fueling operations. They will initiate the safety features actuation system upon sensing high radiation levels that may result from a fueling accident.

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Index No.: 219H-013B  
Rev.: 0

Prepared by: John T. Aliloto Date: 9/20/81  
Checked by: Kenneth D. Moody Date: 9/28/81

NOTES

During normal plant operations, these SFAS detectors will also initiate the safety features actuation system upon sensing high radiation. In the event of a loss of coolant accident, SFAS will be initiated by either a low reactor coolant pressure signal or a high containment vessel pressure signal. These signals will initiate SFAS before initiation would occur due to high radiation levels. Because of this, failure of the detectors, in the accident environment, will not degrade safety-related functions. The operator will not be misled by detector failure because he will determine containment radiation levels by post-accident sampling.

3. Since these components are not required to operate during the postulated accidents, operating time and thermal aging qualification is not applicable.

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Index 219H-014  
Rev.: 0

Prepared by: John T. A. Kato Date: 9/28/81  
Checked by: Donna L. M. Mandy Date: 9/28/81

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: Safety Features Actuation	Operating Time	26 Hours	N/A	F	Note 3	N/A	None
Plant ID No. RE2007	Temperature (°F)	109.0	Exempt	C-Annulus	Note 1	N/A	None
Component: Radiation Detector	Pressure (PSIA)	15.32	Exempt	C-Annulus	Note 1	N/A	None
Manufacturer: Victoreen	Relative Humidity (%)	100.0	Exempt	A	Note 1	N/A	None
Model Number: 845	Chemical Spray	N/A	N/A	N/A	N/A	N/A	None
Function: Radiation Detection	Radiation	1.7 x 10 <sup>7</sup> RADS	Exempt	CAL-44	Note 2	N/A	None
Accuracy: Spec: N/A Demon: N/A	Aging	40 Years	N/A	I	Note 3	N/A	None
Service: Input to SFAS	Submergence	N/A	N/A	N/A	N/A	N/A	None
Location: Annulus El. 585'							
Flood Level Elev: N/A Above Flood Level: N/A							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input type="checkbox"/>							

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SYSTEM COMPONENT EVALUATION WORKSHEET

Index 219H-014A

Rev.: 0

NOTES

Prepared by: John T. Gallato Date: 9/28/81  
Checked by: Kenneth A. Morley Date: 9/28/81

1. This radiation detector provides an input into the safety features actuation system. The only safety-related function performed by this detector is the initiation of the SFAS upon measuring high radiation levels resulting from a fueling accident or a LOCA. The detector is exempt from qualification because it does not perform a safety-related function in the harsh steam environment caused by a high energy line break. Failure of the detector in this environment (along with a similar failure of one of the other three detectors) may initiate the safety features actuation system on a high containment radiation initialing signal. This unlikely SFAS initiation would have the following results:

- a. Initiation of the emergency ventilation system (EVS).
- b. Closure of ECCS Room Isolation Dampers.
- c. Closure of the containment air sample isolation valves.
- d. Closure of the Containment and Penetration Room purge isolation valves.
- e. Stops Control Room normal HVAC units.

These actions will not degrade other safety-related functions because they do not interfere with the mitigation of a HELB. Initiation of the EVS will merely result in the control of a negative pressure boundary in the Annulus and Penetration Rooms. Closure of the ECCS Room's isolation dampers is of little concern because the equipment located in these rooms that is needed to mitigate the high energy line break (RPI pumps), will perform their function. Closure of the containment air sample valves is unimportant because it is unnecessary to sample containment air during a HELB. The purge valves are normally closed during plant operation and the purge system is only needed in the mitigation of a LOCA. The Control Room emergency HVAC units may be initiated in the event that the normal units stop.

Upon the unlikely occurrence of these events, the operator would be aware of the SFAS initiation from the indicating lights on the engineering safety features panel. He may override any of these SFAS actions from the Control Room.

2. This radiation detector is exempt from qualification because its main function is to monitor containment radiation levels during re-fueling. The detectors, which are located in the annulus, are moved inside the containment during re-fueling operations. They will initiate the safety features actuation system upon sensing high radiation levels that may result from a fueling accident.



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SYSTEM COMPONENT EVALUATION WORKSHEET

Index: 219H-014B

Rev.: 0

NOTES

Prepared by: John T. Filante Date: 9/28/81

Checked by: Kenneth D. Mandy Date: 9/28/81

During normal plant operations, these SFAS detectors will also initiate the safety features actuation system upon sensing high radiation. In the event of a loss of coolant accident, SFAS will be initiated by either a low reactor coolant pressure signal or a high containment vessel pressure signal. These signals will initiate SFAS before initiation would occur due to high radiation levels. Because of this, failure of the detectors, in the accident environment, will not degrade safety-related functions. The operator will not be misled by detector failure because he will determine containment radiation levels by post-accident sampling.

3. Since these components are not required to operate during the postulated accidents, operating time and thermal aging qualification is not applicable.