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 HINTZ, D. C. Wisconsin Public Service Corp.
 RECIP. NAME RECIPIENT AFFILIATION
 LEAR, G. E. PWR Project Directorate 1

SUBJECT: Submits progress rept & forwards updates to Attachments 1, 2
 & 3 to author 851031 ltr to SA Varga re accident monitoring
 instrumentation. Program will continue per 850628 ltr. Mods
 will not be initiated until NRC accepts methodology.

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NOTES: See "86 Rpts"

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WISCONSIN PUBLIC SERVICE CORPORATION

600 North Adams • P.O. Box 19002 • Green Bay, WI 54307-9002

May 30, 1986

Director of Nuclear Reactor Regulation
Attention: Mr. G. E. Lear, PWR Project Directorate-1
Operating Reactors Branch No. 1
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
TAC #M51100
Accident Monitoring Instrumentation (AMI)

- References: 1) Letter from D. C. Hintz (WPSC) to S. A. Varga (NRC) dated
June 28, 1985
- 2) Letter from D. C. Hintz (WPSC) to S. A. Varga (NRC) dated
October 31, 1985

Reference 1 outlined the method Wisconsin Public Service Corporation (WPSC) used to determine which instruments were necessary to monitor the course of an accident at the Kewaunee Nuclear Power Plant (KNPP). The submittal also listed these instruments and provided a summary of each instrument's qualifications. The attachments to reference 2 supplied the Nuclear Regulatory Commission (NRC) with a status report on actions WPSC had taken concerning Accident Monitoring Instrumentation (AMI). Reference 2 also committed WPSC to supplying the NRC with a progress report in May of 1986.

This submittal is that progress report and supplies updates to attachments 1, 2, and 3 of reference 2. Attachment 1 to this letter replaces attachment 1 to reference 2. Attachment 2 to this letter replaces attachment 2 to reference 2. Attachment 3 to this letter replaces attachment 3 to reference 2.

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Mr. G. E. Lear
May 30, 1986
Page 2

WPSC will continue its AMI program as described in reference 1. However, WPSC will not initiate modifications until the NRC has reviewed and accepted our methodology. Therefore, we look forward to further discussions on this subject in the near future. In this regard, we will contact you within one month of the date of this letter to answer any questions you may have concerning our methodology.

Sincerely,



D. C. Hintz
Manager-Nuclear Power

TJW/jms

Attach.

cc - Mr. Robert Nelson, US NRC

50-305

ACCIDENT MONITORING INSTRUMENTATION (AMI)

Docket # 50-305
Control # 8606100069
Date 5/30/86 of Document:
REGULATORY DOCKET FILE

Attachment 1

To Letter from
D. C. Hintz (WPSC) to G. E. Lear (NRC)

Dated May 30, 1986

Attachment 1

STATUS INDICATIONS

AC emergency bus power indication (buses 1-5 and 1-6)
CCW pumps breaker position indication
Containment fan coil breaker position indication
High-head SI pumps' breaker position indication
ICS pumps' breaker position indication
Low-head SI (RHR) pumps' breaker position indication
Neutron flux indication
Reactor trip and bypass breaker position indications
SW pumps' breaker position indication

PRESSURE

Containment pressure indication
Pressurizer pressure indication
RCS pressure indication
SG pressure indication

FLOW

Auxiliary feedwater flow
RCS loop flow
Main steam flow indication

POSITION INDICATIONS

AFW TD pump steam supply valves position indication

SI recirculation valves' position indications:

RHR-300A(B)
SI-2A(B)
SI-4A(B)
SI-5A(B)
SI-9A(B)
SI-11A(B)
SI-208
SI-209
SI-300A(B)
SI-302A(B)
SI-350A(B)
SI-351A(B)

Containment fan coil SW valves' position indication
Containment isolation valves' position indication
Main FW bypass regulating valves' position indication
Main FW regulating valves' position indication
Main FW isolation valves' position indication
Main steamline isolation and bypass valves' position indication

Component cooling valves' position indications:

CC-400A(B)
CC-600
CC-601A(B)
CC-610A(B)
CC-612A(B)

ICS recirculation valves' [RHR-400A(B)] position indication
ICS injection valves' [ICS-5A(B) and ICS-6A(B)] position indication

PRZR PORVs' and block valves position indication
SG PORVs' position indication

LEVEL

BAT level indication
PRZR level indication
RWST level indication
SG narrow range level indication

TEMPERATURE

Containment temperature
Core exit T/Cs temperature indication
RCS average temperature indication
RCS cold leg temperature indication
RCS hot leg temperature indication

CONCENTRATION

Containment hydrogen concentration

RADIATION MONITORS

Steam generator blowdown (R-19)
Condenser Air ejector (R-15)

Attachment 2

To Letter from
D. C. Hintz (WPSC) to G. E. Lear (NRC)

Dated May 30, 1986

VARIABLE: AC Emergency Busses Power Indication

ID(S): 46636 46637 . .

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 2 .

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: on/off

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: .

LOWER LIMIT: .

UNITS:

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): +

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): *

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Located on the Electrical Control Console

Control Room Indication - Indicating Lights

EOF and TSC Indication - None

Power Supply Drawings - E1801, E1800, E799

*Instrument seismically qualified to the relay room.

However, it is not seismically qualified from the relay room to the control room.

+Instrument is located in a mild environment; therefore, environmental qualification is unnecessary.

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: Comp Cooling Water Pump Breaker Position Indication

ID(S): 46301 46302 . .

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: on/off

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: .

LOWER LIMIT: .

UNITS:

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): *

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Located on Mechanical Control Console C
System - 31

*Instrument is located in a mild environment; therefore,
environmental qualification is unnecessary.

Control Room Indication - Indicating Lights

EOF and TSC Indication - None

Power Supply Drawings - E1816, E798, E1082, E1815, E799,
E1089

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: Containment Fan Coil Breaker Position Indication

ID(S): 46539 46540 46541 46542

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1

PLANT INSTRUMENT RANGE: REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

UPPER LIMIT: .

LOWER LIMIT: 0.00E+00

LOWER LIMIT: .

UNITS: on/off

UNITS:

EQUIPMENT QUALIFICATION:

SEISMIC QUALIFICATION:

EQ REQUIRED (Y/N): Y

SEISMIC QUAL. REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): *

SEISMICALLY QUALIFIED (Y/N): Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Located on Mechanical Vertical Panel A

System - 18

Flow Diagram - M602

*The instrument is located in a mild environment; therefore, environmental qualification is unnecessary.

Power Supply Drawings - E3116, E3115, E1080, E844, E233

Control Room Indication - Indicating Lights

EOF and TSC Indication - None

INDICATION TYPES

1 -- LOCAL READOUT

2 -- LOCAL RECORDER

3 -- BOTH 1 & 2

4 -- REMOTE READOUT

5 -- REMOTE RECORDER

6 -- BOTH 4 & 5

7 -- SEE NOTES

POWER SUPPLY TYPES

1 -- SAFETY GRADE

2 -- HIGHLY RELIABLE

3 -- OFFSITE POWER

VARIABLE: SI Pump Breaker Position Indication

ID(S): 46307 46308 . .

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: on/off

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: .

LOWER LIMIT: .

UNITS:

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): *

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Located on Mechanical Control Console C

System - 33

*The instrument is located in a mild environment; therefore, environmental qualification is unnecessary.

Power Supply Drawings - E1818, E798, E492, E1042, E1041,

E1040, E1039, E1038, E1037, E1036, E844, E233

Control Room Indication - Indicating Lights

TSC and EOF Indication - None

INDICATION TYPES

1 -- LOCAL READOUT

2 -- LOCAL RECORDER

3 -- BOTH 1 & 2

4 -- REMOTE READOUT

5 -- REMOTE RECORDER

6 -- BOTH 4 & 5

7 -- SEE NOTES

POWER SUPPLY TYPES

1 -- SAFETY GRADE

2 -- HIGHLY RELIABLE

3 -- OFFSITE POWER

VARIABLE: ICS Pump Breaker Position Indication	
ID(S): 46305 46306 . .	
REGULATORY GUIDE CATEGORY: 1	
REGULATORY GUIDE TYPE: A	
QA TYPE: 1	
PLANT INSTRUMENT RANGE:	REGULATORY GUIDE INSTRUMENT RANGE:
UPPER LIMIT: 1.00E+00	UPPER LIMIT: .
LOWER LIMIT: 0.00E+00	LOWER LIMIT: .
UNITS: on/off	UNITS:
EQUIPMENT QUALIFICATION:	SEISMIC QUALIFICATION:
EQ REQUIRED (Y/N): Y	SEISMIC QUAL. REQUIRED (Y/N): Y
EQ QUALIFIED (Y/N): *	SEISMICALLY QUALIFIED (Y/N): Y
REDUNDANCY:	
REDUNDANCY REQUIRED (Y/N): Y	
REDUNDANT? (Y/N): Y	
POWER SUPPLY TYPE: 1	INDICATION:
	CONTROL ROOM: 4
	EOF: 7
	TSC: 7
NOTES:	
Located on Mechanical Control Console C	
Flow Diagram - M217	
System - 23	
*The instrument is located in a mild environment; therefore, environmental qualification is unnecessary	
Power Supply Drawing - E1817, E798, E548	
Control Room Indication - Indicating Light	
EOF and TSC Indication - None	
INDICATION TYPES	
1 -- LOCAL READOUT	POWER SUPPLY TYPES
2 -- LOCAL RECORDER	1 -- SAFETY GRADE
3 -- BOTH 1 & 2	2 -- HIGHLY RELIABLE
4 -- REMOTE READOUT	3 -- OFFSITE POWER
5 -- REMOTE RECORDER	
6 -- BOTH 4 & 5	
7 -- SEE NOTES	

VARIABLE: RHR Pump Breaker Position Indication

ID(S): 46303 46304 . .

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: on/off

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: .

LOWER LIMIT: .

UNITS:

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): *

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Located on Mechanical Control Console C
System - 34

*The instrument is located in a mild environment; therefore,
environmental qualification is unnecessary.

Power Supply Drawing - E1036, E844, E233

Control Room Indication - Indicating Lights

EOF and TSC Indication - None

INDICATION TYPES

1 -- LOCAL READOUT

2 -- LOCAL RECORDER

3 -- BOTH 1 & 2

4 -- REMOTE READOUT

5 -- REMOTE RECORDER

6 -- BOTH 4 & 5

7 -- SEE NOTES

POWER SUPPLY TYPES

1 -- SAFETY GRADE

2 -- HIGHLY RELIABLE

3 -- OFFSITE POWER

VARIABLE: Neutron Flux - Source Range

ID(S): 4122901 4122902 41229033 4122904
28043 28037 . .

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: E

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E-03

LOWER LIMIT: 1.00E-09

UNITS: %POWER

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+02

LOWER LIMIT: 1.00E-06

UNITS: %POWER

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): N

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): N

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Located on Mechanical Control Console B

P.O. - XK100

System - 48

Control Room Indication - 0 to 1.00E06 CPS

Power Supply Drawings - E804, E800, E525, E845, E233

Control Room Peadout - Real Time Display and Computer Print Out.

EOF and TSC Readout - Computer Print Cut

INDICATION TYPES

1 -- LOCAL READOUT

2 -- LOCAL RECORDER

3 -- BOTH 1 & 2

4 -- REMOTE READOUT

5 -- REMOTE RECORDER

6 -- BOTH 4 & 5

7 -- SEE NOTES

POWER SUPPLY TYPES

1 -- SAFETY GRADE

2 -- HIGHLY RELIABLE

3 -- OFFSITE POWER

VARIABLE: Neutron Flux - Intermediate Range

ID(S): 4122801 4122802 4122803 4122804
28044 28038 - .

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: B

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+02

LOWER LIMIT: 1.00E-06

UNITS: %POWER

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+02

LOWER LIMIT: 1.00E-06

UNITS: %POWER

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): N

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): N

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Located on Mechanical Control Console B

P.O. - XK100

System - 48

Control Room Indication - 1E-11 to 1E-03 amp.

Power Supply Drawings - E804, E525, E800, E845, E233

Control Room Readout - Real Time Display and Computer Print Out.

EOF and TSC Readout - Computer Print Out.

INDICATION TYPES

1 -- LOCAL READOUT

2 -- LOCAL RECORDER

3 -- BOTH 1 & 2

4 -- REMOTE READOUT

5 -- REMOTE RECORDER

6 -- BOTH 4 & 5

7 -- SEE NOTES

POWER SUPPLY TYPES

1 -- SAFETY GRADE

2 -- HIGHLY RELIABLE

3 -- OFFSITE POWER

VARIABLE: Neutron Flux - Power Range			
ID (S):	4122601	4122602	4122603
	28041	28047	28045
			4122604
			28039
REGULATORY GUIDE CATEGORY: 1			
REGULATORY GUIDE TYPE: E			
QA TYPE: 1			
PLANT INSTRUMENT RANGE:		REGULATORY GUIDE INSTRUMENT RANGE:	
UPPER LIMIT:	1.20E+02	UPPER LIMIT:	1.00E+02
LOWER LIMIT:	1.00E-01	LOWER LIMIT:	1.00E-06
UNITS:	%POWER	UNITS:	%POWER
EQUIPMENT QUALIFICATION:		SEISMIC QUALIFICATION:	
EQ REQUIRED (Y/N):	Y	SEISMIC QUAL. REQUIRED (Y/N):	Y
EQ QUALIFIED (Y/N):	N	SEISMICALLY QUALIFIED (Y/N):	N
REDUNDANCY:			
REDUNDANCY REQUIRED (Y/N): Y			
REDUNDANT? (Y/N): Y			
POWER SUPPLY TYPE: 1		INDICATION:	
		CONTROL ROOM: 4	
		EOF: 7	
		TSC: 7	
NOTES:			
Located on Mechanical Control Console B			
P.O. - XK100			
System - 48			
See Reactor Power Recorder 42585			
Power Supply Drawings - E804, E525, E800, E845, E233			
Control Room Readout - Real Time Display and Computer Print Out			
EOF and TSC Readout - Computer Print out			
INDICATION TYPES		POWER SUPPLY TYPES	
1 --	LOCAL READOUT	1 --	SAFETY GRADE
2 --	LOCAL RECORDER	2 --	HIGHLY RELIABLE
3 --	BOTH 1 & 2	3 --	OFFSITE POWER
4 --	REMCTE READOUT		
5 --	REMCTE RECORDER		
6 --	BOTH 4 & 5		
7 --	SEE NOTES		

VARIABLE: Reactor Trip and Bypass Breaker Position Indication

ID(S): 4456201 4456202 4456203 4456204

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: GL/RL

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: .

LOWER LIMIT: .

UNITS:

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): *

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 6

EOF: 6

TSC: 6

NOTES:

Located on Mechanical Vertical Panel B

System - 47

*The instrument is located in a mild environment; therefore, environmental qualification is unnecessary.

Power Supply Drawings - E2499, E844, E233

Control Room Indication - Indicating Lights & Computer

Printout

EOF and TSC Indication - Computer Printout

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: Service Water Pump Breaker Position Indication

ID(S): 46524 46525 46526 46527

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1

PLANT INSTRUMENT RANGE:

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

UPPER LIMIT: .

LOWER LIMIT: 0.00E+00

LOWER LIMIT: .

UNITS: on/off

UNITS:

EQUIPMENT QUALIFICATION:

SEISMIC QUALIFICATION:

EQ REQUIRED (Y/N): Y

SEISMIC QUAL. REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): *

SEISMICALLY QUALIFIED (Y/N): Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

TES:

Located on Mechanical Vertical Panel A

System - 2

*The instrument is located in a mild environment; therefore, environmental qualification is unnecessary.

Control Room Indication - Indicating Lights

EOF and TSC Indication - None

INDICATION TYPES

POWER SUPPLY TYPES

1 -- LOCAL READOUT

1 -- SAFETY GRADE

2 -- LOCAL RECORDER

2 -- HIGHLY RELIABLE

3 -- BOTH 1 & 2

3 -- OFFSITE POWER

4 -- REMOTE READOUT

-- REMOTE RECORDER

6 -- BOTH 4 & 5

7 -- SEE NOTES

VARIABLE: Containment Pressure (0-60)

ID(S): 4150504 4150505 4150506 21117
21118 21119 . .

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: E

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 6.00E+01

LOWER LIMIT: 0.00E+00

UNITS: PSID

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.84E+02

LOWER LIMIT: -5.00E+00

UNITS: PSID

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): *

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 6

EOF: 6

TSC: 6

NOTES:

Located on Mechanical Vertical Panel A / System 18

Flow Diagram - M602 / P.C. - XK100 / R.G. 1.97 Required

Range = -5 psig to 4x (Design Pressure) / Design Pressure =
46 psig (FSAR pg 5.2-1)

*The transmitter and the cabling to the relay room are
seismically qualified. The cabling from the relay room
to the indicator is not seismically qualified.

Power Supply Drawings - E828, E675, E845, E233

Control Room Indication - Real Time Display and Computer
Print Out

EOF Indication - Computer Print Out

TSC Indication - Printer and Computer Print Out

INDICATION TYPES

1 -- LOCAL READOUT

2 -- LOCAL RECORDER

3 -- BOTH 1 & 2

4 -- REMOTE READOUT

5 -- REMOTE RECORDER

6 -- BOTH 4 & 5

7 -- SEE NOTES

POWER SUPPLY TYPES

1 -- SAFETY GRADE

2 -- HIGHLY RELIABLE

3 -- OFFSITE POWER

05/05/86

VARIABLE: RCS Pressure (Pressurizer Pressure)

ID(S): 4122201 4122202 4122301 4122302
42301 21079 21082 .

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 2.50E+03

LOWER LIMIT: 1.70E+03

UNITS: PSIG

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: .

LOWER LIMIT: .

UNITS:

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): *

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 6

EOF: 6

TSC: 6

NOTES:

Mechanical Control Console B

Flow Diagram - XK100-10

P.O. - XK100

System - 36

*The transmitter and the cabling from transmitter to relay room are seismically qualified. The cabling from the relay room to the indicator is not seismically qualified.

Design Pressure - 2485 psig (S.D. 36-3 & Dwg. XK100-2)

Control Room Indication - Real Time Display and Computer Print Out.

EOF and TSC Indication - Computer Print Out

INDICATION TYPES

1 -- LOCAL READOUT

2 -- LOCAL RECORDER

3 -- BOTH 1 & 2

4 -- REMOTE READOUT

5 -- REMOTE RECORDER

6 -- BOTH 4 & 5

7 -- SEE NOTES

POWER SUPPLY TYPES

1 -- SAFETY GRADE

2 -- HIGHLY RELIABLE

3 -- OFFSITE POWER

05/05/86

VARIABLE: RCS Hot Leg Pressure

ID(S):	4130101	4130102	42556	4255601
	4256602	21077	21038	-

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1/2

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 3.00E+03

LOWER LIMIT: 0.00E+00

UNITS: PSIG

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 3.00E+03

LOWER LIMIT: 0.00E+00

UNITS: PSIG

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): *

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 2

INDICATION:

CONTROL ROOM: 6

EOF: 6

TSC: 6

NOTES:

Located on MVPA and MCCC / P.O. - 95543

System - 36

RCS Design Pressure - 2485 psig (FSAR Table 4.1-1)

*Trans. 21038 and its cabling to relay room are seismically qualified; 21077 is seismically qualified, but the cabling to its indicator is not.

Power Supply Drawings - E829, E783, E702, E845, E233

Control Room Indication - Real Time Display (4130101 and 4130102) and Computer Link

EOF and TSC Indication - Computer Print Out

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

05/05/86

VARIABLE: Steam Generator Header Pressure

ID(S): 4104901 4104902 4104903 4105301
4105302 4105303 . .

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.40E+03

LOWER LIMIT: 0.00E+00

UNITS: PSIG

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.29E+03

LOWER LIMIT: 0.00E+00

UNITS: PSIG

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): *

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 6

EOF: 6

TSC: 6

NOTES:

ON Mechanical Control Console A

P.O. - XK34233

System - 6

R.G. 1.97 Require Range - Opsig to 1.2 x (lowest safety valve setting).

Lowest Relief Valve Setting = 1074 psig (FSAR page 10.2-7).

Transmitters - 21094 21095 21096 21097 21098 21099

*Transmitter & cabling to relay rm is seismically qualified.

Cabling from relay room to indicator is not seismically qualified.

Control Indication - Real Time Display and Computer Print Out

EOF INDICATION - COMPUTER PRINT OUT

TSC INDICATION - STRIP CHART & COMPUTER PRINT OUT

POWER SUPPLY DRAWINGS - E828, E673, E845, E233

INDICATION TYPES

1 -- LOCAL READOUT

2 -- LOCAL RECORDER

3 -- BOTH 1 & 2

4 -- REMOTE READOUT

5 -- REMOTE RECORDER

6 -- BOTH 4 & 5

7 -- SEE NOTES

POWER SUPPLY TYPES

1 -- SAFETY GRADE

2 -- HIGHLY RELIABLE

3 -- OFFSITE POWER

VARIABLE: Aux FW Flow to Steam Generator

ID(S): 4104202 4104102 23012 23010

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1/2

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 5.00E+02

LOWER LIMIT: 0.00E+00

UNITS: GPM

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 3.96E+02

LOWER LIMIT: 0.00E+00

UNITS: GPM

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): N

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 2

INDICATION:

CONTROL ROOM: 6

EOF: 6

TSC: 6

NOTES:

Located on Mechanical Control Console A

Flow Diagram - M205

P.O. - XK276

System - 5E

1.97 Requires a Range of 0 to 110% of Design.

Design Flow - 360 gpm; 3 pumps, 240 gpm each; 2 S.G.

The instrument is seismically qualified; however, the cabling is not.

Control Room Indication - Real Time Display, Computer Print Out.

EOF and TSC Indication - Computer Print Out.

Power Supply Drawings-E2377, E2378, E831, XK390-12, XK390-14

INDICATION TYPES

1 -- LOCAL READOUT

2 -- LOCAL RECORDER

3 -- BOTH 1 & 2

4 -- REMOTE READOUT

5 -- REMOTE RECORDER

6 -- BOTH 4 & 5

7 -- SEE NOTES

POWER SUPPLY TYPES

1 -- SAFETY GRADE

2 -- HIGHLY RELIABLE

3 -- CFFSITE POWER

05/05/86

VARIABLE: RCS Loop Flow

ID(S): 4132301 4132302 4132303 4132401
4132402 4132403 . .

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.10E+02

LOWER LIMIT: 0.00E+00

UNITS: %

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: .

LOWER LIMIT: .

UNITS:

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): N

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 6

EOF: 6

TSC: 6

NOTES:

Located on Mechanical Control Console C

Transmitters - 23024, 23025, 23026, 23027, 23028, 23029

Flow Diagram - X100-10

System - 36

Control Room Indication - Real Time Display and Computer Print Out

EOF and TSC Indication - Computer Print Out

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

05/05/86

VARIABLE: Main Steam Flow

ID(S):	4105001	4105002	4105101	4105102
	23001	23005	23002	23007

REGULATORY GUIDE CATEGORY: 2

REGULATORY GUIDE TYPE: D

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 4.50E+00

LOWER LIMIT: 0.00E+00

UNITS: MPPH

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 4.50E+00

LOWER LIMIT: 0.00E+00

UNITS: MPPH

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 6

EOF: 6

TSC: 6

NOTES:

Located on Mechanical Control Console A

Design Flow Rate - 4.07 MPPH (FSAR p. Table 10.1-1)

Flow Diagram - M203

P.O. - XK3425

System - 6

Control Room Readout - Real Time Display, Computer Print Out

EOF and TSC Readout - Computer Print Out

Power Supply Drawings - E828, E788, E673, E845, E233

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

05/05/86

VARIABLE: Aux FW TD Pump Steam Supply Valve Pos.

ID(S): 46113 46114 46118 32038
32039 32040 . .

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1 .

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: op/cl

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: .

LOWER LIMIT: .

UNITS:

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Located on Mechanical Control Console A

Valves MS 100A, MS 100B, and MS102

System - 50

Flow Diagram - M203

PO - K204

Power Supply Drawings - E1486, E1986, E843, E233

Control Room Indication - Indicating Lights

EOF and TSC Indication - None

Redundancy not required at the component level. Redundancy is provided at the system level.

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: SI RECIRCULATION VALVES' POSITION INDICATION

ID(S):

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: OP/CL

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: OP/CL

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

VALVES	QA	EQ	PS	ID
RHR-300A(B)	1	Y	1	32134; 46363 (32135; 46364)
SI-2A(B)	1	Y	1	32104; 46371 (32105; 46372)
SI-4A(B)	1	Y	1	32109; 46377 (32110; 46378)
SI-5A(B)	1	Y	1	32107; 46379 (32108; 46380)
SI-9A(B)	1	Y	1	32094; 46381 (32095; 46382)
SI-11A(B)	1	Y	1	32092; 46383 (32097; 46384)
SI-208	1	Y	1	32131; 46392
SI-209	1	Y	1	32130; 46391
SI-300A(B)	1	Y	1	32111; 46361 (32112; 46362)
SI-302A(B)	1	Y	1	32100; 46359 (32101; 46360)
SI-350A(B)	1	Y	1	32102; 46355 (32103; 46356)
SI-351A(B)	1	Y	1	32113; 46357 (32114; 46358)

EOF AND TSC INDICATION - NONE

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: Containment Fan Coil SW Valves' Position Indication

ID(S):	46509	46510	46511	46512
	32060	32061	32058	32059

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: op/cl

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: .

LOWER LIMIT: .

UNITS:

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Located on Mechanical Vertical Panel A

Valves - SW 903A, SW 903E, SW 903C, SW 903D

Flow Diagram - M202

System - 2

Power Supply Drawings - E627, E3259

EOF and TSC Indication - None

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: Containment Isolation (Containment)

ID(S):

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: B

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: cl/ncl

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: cl/ncl

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N):

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: .

TSC: .

NOTES:

Valve	QA	EQ	SQ	PS	ID
AS 1	1	Y	N	1	31383-01,02; 46563
AS 2	1	Y	N	1	31384-01,02; 46564
AS 32	1	Y	N	1	31385-01,02; 46565
CVC 54	1	Y	Y	1	33651; 46968
MD(R) 323A	1	Y	Y	1	32391; 46967
MD(R) 323B	1	Y	Y	1	32390; 46966
VB 10A	1	Y	Y	1	31337,01,02; 46828
VB 10B	1	Y	Y	1	31338; 46829
WG 311	1	Y	Y	1	33654; 46972
WG 310	1	Y	Y	1	33655; 46971

All have Control Room Indication.

NO EOF OR TSC INDICATION.

INDICATION TYPES

1 -- LOCAL READOUT

2 -- LOCAL RECORDER

3 -- BOTH 1 & 2

4 -- REMOTE READOUT

5 -- REMOTE RECORDER

6 -- BOTH 4 & 5

7 -- SEE NOTES

POWER SUPPLY TYPES

1 -- SAFETY GRADE

2 -- HIGHLY RELIABLE

3 -- OFFSITE POWER

VARIABLE: Containment Isolation (CVC Letdown)

ID(S): 46234 46235 46236 46233

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: E

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: cl/ncl

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: cl/ncl

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Valve	QA	EQ	SQ	ES	ID
LD 4A	1	Y	Y	1	31231-01,02; 46234
LD 4B	1	Y	Y	1	31232-01,02; 46235
LD 4C	1	Y	Y	1	31233-01,02; 46236
LD 6	1	Y	Y	1	31234-01,02; 46233

All have Control Room Indication

No EOF or TSC Indication

System - 35

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: Containment Isolation (Excess Letdown HX)

ID(S): 46338 32082 . .

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: E

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: cl/ncl

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: cl/ncl

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Valve - CC 653

No Indication in the EOF or TSC

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: Containment Isolation (ICS System)

ID(S): 46419 46418 31273 31272

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: F

QA TYPE: 1

PLANT INSTRUMENT RANGE:	REGULATORY GUIDE INSTRUMENT RANGE:
UPPER LIMIT: 1.00E+00	UPPER LIMIT: 1.00E+00
LOWER LIMIT: 0.00E+00	LOWER LIMIT: 0.00E+00
UNITS: cl/ncl	UNITS: cl/ncl

EQUIPMENT QUALIFICATION:	SEISMIC QUALIFICATION:
EQ REQUIRED (Y/N): Y	SEISMIC QUAL. REQUIRED (Y/N): Y
EQ QUALIFIED (Y/N): Y	SEISMICALLY QUALIFIED (Y/N): N

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Valves	QA	EQ	SQ	PS	IDs
ICS 201	1	Y	N	1	31273; 46419
ICS 202	1	Y	N	1	31272; 46418

EOF and TSC Indication - None
Flow Diagram - M217
System - 23
P.O. - K267

INDICATION TYPES

1 -- LOCAL READOUT
2 -- LOCAL RECORDER
3 -- BOTH 1 & 2
4 -- REMOTE READCUT
5 -- REMOTE RECORDER
6 -- BOTH 4 & 5
7 -- SEE NOTES

POWER SUPPLY TYPES

1 -- SAFETY GRADE
2 -- HIGHLY RELIABLE
3 -- OFFSITE POWER

VARIABLE: Containment Isolation (Primary Sampling System)	
ID(S):	
REGULATORY GUIDE CATEGORY: 1	
REGULATORY GUIDE TYPE: B	
QA TYPE: 1	
PLANT INSTRUMENT RANGE:	REGULATORY GUIDE INSTRUMENT RANGE:
UPPER LIMIT: 1.00E+00	UPPER LIMIT: 1.00E+00
LOWER LIMIT: 0.00E+00	LOWER LIMIT: 0.00E+00
UNITS: cl/ncl	UNITS: cl/ncl
EQUIPMENT QUALIFICATION:	SEISMIC QUALIFICATION:
EQ REQUIRED (Y/N): Y	SEISMIC QUAL. REQUIRED (Y/N): Y
EQ QUALIFIED (Y/N): Y	SEISMICALLY QUALIFIED (Y/N):
REDUNDANCY:	
REDUNDANCY REQUIRED (Y/N): Y	
REDUNDANT? (Y/N): Y	
POWER SUPPLY TYPE: 1	INDICATION:
	CONTROL ROOM: 4
	EOF: 7
	TSC: 7
NOTES:	
Valve	QA EQ SQ PS ID
RC 403	1 Y N 1 31267-01,02; 46544-01,02
RC 402	1 Y Y 1 31263-01,02; 46805-01,02
RC 413	1 Y N 1 31268-01,02; 46544-03,04
RC 412	1 Y Y 1 31264-01,02; 46806
RC 422	1 Y Y 1 33092; 46804,01,02
RC 423	1 Y Y 1 33327; 46544-05,06
No EOF or TSC Indication	
System - 37	
INDICATION TYPES	
1 -- LOCAL READOUT	
2 -- LOCAL RECORDER	
3 -- BOTH 1 & 2	
4 -- REMOTE READOUT	
5 -- REMOTE RECORDER	
6 -- BOTH 4 & 5	
7 -- SEE NOTES	
POWER SUPPLY TYPES	
1 -- SAFETY GRADE	
2 -- HIGHLY RELIABLE	
3 -- OFFSITE POWER	

VARIABLE: Containment Isolation (Purge and Ventilation)

ID(S):

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: E

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: cl/ncl

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: cl/ncl

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Valve	QA	EQ	SQ	PS	ID
RBV 1	1	Y	Y	1	31125; 46598-01,02
RBV 2	1	Y	Y	1	31126; 46596-01,02
RBV 3	1	Y	Y	1	31124; 46595-01,02
RBV 4	1	Y	Y	1	31123,01,02; 46597

All have Control Room Indication.

No Indication in EOF or TSC.

Flow Diagram - M602

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: Containment Isolation (PRT)

ID(S):

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: E

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: cl/ncl

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: cl/ncl

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N):

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Valve	QA	EQ	SQ	PS	ID
MG(R) 513	1	Y	N	1	31260,01,02; 46808
MG(R) 512	1	Y	N	1	31259,01,02; 46807
NG 302	1	Y	Y	1	31298,01,02; 46365
MU 1010-1	1	Y	N	1	31261; 46801

All have Control Room Indication

No EOF or TSC Indication

System - 36

Flow Diagram - XK100-10

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

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VARIABLE: Containment Isolation (RCDT)

ID(S):	46310	46309	46330	46329
	46368	46367	.	.

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: B

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: cl/ncl

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: cl/ncl

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): N

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Valve	QA	EQ	SQ	PS	ID
MG(R) 510	1	Y	N	1	31133,01,02; 46310
MG(R) 509	1	Y	N	1	31132,01,02; 46309
MG(R) 504	1	Y	N	1	31217,01,02; 46330
MG(R) 503	1	Y	N	1	31216,01,02; 46329
RC 508	1	Y	N	1	31135,01,02; 46368
RC 507	1	Y	N	1	31134,01,02; 46367

All have Control Room Indication

No EOF or TSC Indication

System - 32

Flow Diagram - XK100-131

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: Containment Isolation (RCP)

ID(S):

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: E

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: cl/ncl

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: cl/ncl

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Valve QA EQ SQ PS IDs

CVC 211 1 Y Y 1 32124; 46211

CVC 212 1 Y Y 1 32115; 46214

Both have control room indication. No EOF or TSC indication.

System - 35

Flow Diagram - XK100-35

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: Containment Isolation (Steam Generator)

ID(S):

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: B

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: cl/ncl

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: cl/ncl

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N):

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Valve	QA	EQ	SQ	PS	ID
BT 2A	1	Y	Y	1	32077; 46131
BT 2B	1	Y	Y	1	32079; 46133
BT 3A	1	Y	Y	1	32078; 46132
BT 3B	1	Y	Y	1	32080; 46134
BT 31A	1	Y	Y	1	31334; 46135
BT 31B	1	Y	Y	1	31270; 46135
BT 32A	1	Y	N	1	31335; 46140
BT 32B	1	Y	N	1	31271; 46140

EOF and TCS Indication - None

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: Containment Isolation (Sump A)						
ID(S):	46811	46812	31136	31137		
REGULATORY GUIDE CATEGORY: 1						
REGULATORY GUIDE TYPE: E						
QA TYPE: 1						
PLANT INSTRUMENT RANGE:			REGULATORY GUIDE INSTRUMENT RANGE:			
UPPER LIMIT: 1.00E+00			UPPER LIMIT: 1.00E+00			
LOWER LIMIT: 0.00E+00			LOWER LIMIT: 0.00E+00			
UNITS: cl/ncl			UNITS: cl/ncl			
EQUIPMENT QUALIFICATION:			SEISMIC QUALIFICATION:			
EQ REQUIRED (Y/N): Y			SEISMIC QUAL. REQUIRED (Y/N): Y			
EQ QUALIFIED (Y/N): Y			SEISMICALLY QUALIFIED (Y/N): N			
REDUNDANCY:						
REDUNDANCY REQUIRED (Y/N): Y						
REDUNDANT? (Y/N): Y						
POWER SUPPLY TYPE: 1			INDICATION:			
			CONTROL ROOM: 4			
			EOF: 7			
			TSC: 7			
NOTES:						
Valve	QA	EQ	SQ	PS	IDS	
MD(R) 134	1	Y	N	1	31136;	46811
MD(R) 135	1	Y	N	1	31137;	46812
Both have Control Room indication.						
System - 32A						
Flow Diagram - XK100-131						
INDICATION TYPES			POWER SUPPLY TYPES			
1 -- LOCAL READOUT			1 -- SAFETY GRADE			
2 -- LOCAL RECORDER			2 -- HIGHLY RELIABLE			
3 -- BOTH 1 & 2			3 -- OFFSITE POWER			
4 -- REMOTE READOUT						
5 -- REMOTE RECORDER						
6 -- BOTH 4 & 5						
7 -- SEE NOTES						

VARIABLE: Containment Isolation (SI Accumulators N2 Supply)

ID(S): 46376 31253 . .

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: E

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: cl/ncl

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: cl/ncl

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): N

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Valve NG 107

No EOF or TSC Indication

System - 33

Flow Diagram - XK100-28

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: Feedwater Regulating Bypass Valves FW-10A (B)

ID(S): 44038 44040 31157 31158

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: op/cl

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: op/cl

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): N

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 2

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Located on mechanical control console panel A

System - 5A

Flow diagram-M205

Valve P.O. - XK100

Limit Switch P.O. - 73374

The valve and limit switches are seismically qualified;
however, the cabling is not.

Control Room Indication - Indicating Lights

TSC and EOF Indication - None

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

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VARIABLE: Feedwater Regulating Valves FW-7A(B)	
ID(S):	44037 44039 31027 31030
REGULATORY GUIDE CATEGORY: 1	
REGULATORY GUIDE TYPE: A	
QA TYPE: 1	
PLANT INSTRUMENT RANGE:	REGULATORY GUIDE INSTRUMENT RANGE:
UPPER LIMIT: 1.00E+00	UPPER LIMIT: 1.00E+00
LOWER LIMIT: 0.00E+00	LOWER LIMIT: 0.00E+00
UNITS: op/cl	UNITS: op/cl
EQUIPMENT QUALIFICATION:	SEISMIC QUALIFICATION:
EQ REQUIRED (Y/N): Y	SEISMIC QUAL. REQUIRED (Y/N): Y
EQ QUALIFIED (Y/N): Y	SEISMICALLY QUALIFIED (Y/N): N
REDUNDANCY:	
REDUNDANCY REQUIRED (Y/N): Y	
REDUNDANT? (Y/N): Y	
POWER SUPPLY TYPE: 2	INDICATION:
	CONTROL ROOM: 4
	EOF: 7
	TSC: 7
NOTES:	
Located on Mechanical Control Console A	
System - 5A	
Flow Diagram - M205	
Valve P.O. - XK100	
Limit Switch P.O. - 73374	
The valve and limit switches are seismically qualified;	
however, the cabling is not.	
Control Room Indication - Indicating Lights	
TSC & EOF indication - None	
INDICATION TYPES	
1 -- LOCAL READOUT	POWER SUPPLY TYPES
2 -- LOCAL RECORDER	1 -- SAFETY GRADE
3 -- BOTH 1 & 2	2 -- HIGHLY RELIABLE
4 -- REMOTE READOUT	3 -- OFFSITE POWER
5 -- REMOTE RECORDER	
6 -- BOTH 4 & 5	
7 -- SEE NOTES	

VARIABLE: Feedwater Isolation Valve Position

ID(S): 46119 46120 32015 32016

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: op/cl

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: op/cl

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Valve	QA	EQ	PS	ID
FW 12A	1	Y	1	32015; 46119
FW 12B	1	Y	1	32016; 46120

System - 5A

Flow Diagram - M205

Control Room Indication - Indicating Lights

EOF and TSC Indication - None

Power Supply Drawings - E627, E3081, E3077

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: MS and Bypass Isolation Valve Position	
ID(S):	46136 46137 46107 46108
REGULATORY GUIDE CATEGORY: 1	
REGULATORY GUIDE TYPE: A	
QA TYPE: 1	
PLANT INSTRUMENT RANGE:	REGULATORY GUIDE INSTRUMENT RANGE:
UPPER LIMIT: 1.00E+00	UPPER LIMIT: 1.00E+00
LOWER LIMIT: 0.00E+00	LOWER LIMIT: 0.00E+00
UNITS: op/cl	UNITS: op/cl
EQUIPMENT QUALIFICATION:	SEISMIC QUALIFICATION:
EQ REQUIRED (Y/N): Y	SEISMIC QUAL. REQUIRED (Y/N): Y
EQ QUALIFIED (Y/N):	SEISMICALLY QUALIFIED (Y/N):
REDUNDANCY:	
REDUNDANCY REQUIRED (Y/N): Y	
REDUNDANT? (Y/N): Y	
POWER SUPPLY TYPE: .	INDICATION:
	CONTROL ROOM: 4
	EOF: 7
	TSC: 7
NOTES:	
Valve	QA EQ PS SQ ID
MS 1A	1 Y 2 Y 31015; 46136
MS 1B	1 Y 2 Y 31016; 46137
MS 2A	1 N 1 N 32007; 46107
MS 2B	1 N 1 N 32008; 46108
The selinoid valves that control MS 1A(B) have Type 1 power supply.	
Control Room Indication - Indicating Lights	
EOF and TSC Indication - None	
Flow Diagram = M203	
INDICATION TYPES	
1 -- LOCAL READOUT	
2 -- LOCAL RECORDER	
3 -- BOTH 1 & 2	
4 -- REMOTE READOUT	
5 -- REMOTE RECORDER	
6 -- BOTH 4 & 5	
7 -- SEE NOTES	
POWER SUPPLY TYPES	
1 -- SAFETY GRADE	
2 -- HIGHLY RELIABLE	
3 -- OFFSITE POWER	

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VARIABLE: Component Cooling Valves' Position Indication	
ID(S):	46337 46334 46336 46331 46332 46333 46335 .
REGULATORY GUIDE CATEGORY: 1	
REGULATORY GUIDE TYPE: A	
QA TYPE: 1	
PLANT INSTRUMENT RANGE:	REGULATORY GUIDE INSTRUMENT RANGE:
UPPER LIMIT: 1.00E+00	UPPER LIMIT: 1.00E+00
LOWER LIMIT: 0.00E+00	LOWER LIMIT: 0.00E+00
UNITS: op/cl	UNITS: op/cl
EQUIPMENT QUALIFICATION:	SEISMIC QUALIFICATION:
EQ REQUIRED (Y/N): Y	SEISMIC QUAL. REQUIRED (Y/N): Y
EQ QUALIFIED (Y/N): Y	SEISMICALLY QUALIFIED (Y/N): Y
REDUNDANCY:	
REDUNDANCY REQUIRED (Y/N): Y	
REDUNDANT? (Y/N): Y	
POWER SUPPLY TYPE: 1	INDICATION:
	CONTROL ROOM: 4
	EOF: 7
	TSC: 7
NOTES:	
Valve	QA EQ PS SQ IDs
CC 600	1 Y 1 Y 32088; 46337
CC 601A	1 Y 1 Y 32084; 46334
CC 601B	1 Y 1 Y 32085; 46336
CC 610A	1 N 1 Y 31127; 46331
CC 610B	1 N 1 Y 31128; 4633201,02
CC 612A	1 Y 1 Y 32086; 46333
CC 612B	1 Y 1 Y 32087; 46335
CC 400A	1 Y 1 Y 32119; 46343
CC 400B	1 Y 1 Y 32120; 46344
Control Room Indication - Indication Lights	
EOF and TSC Indication - None	
Flow Diagram XK100-20	
INDICATION TYPES	
1 -- LOCAL READOUT	POWER SUPPLY TYPES
2 -- LOCAL RECORDER	1 -- SAFETY GRADE
3 -- BOTH 1 & 2	2 -- HIGHLY RELIABLE
4 -- REMOTE READOUT	3 -- OFFSITE POWER
5 -- REMOTE RECORDER	
6 -- BOTH 4 & 5	
7 -- SEE NOTES	

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VARIABLE: ICS Recirculation Valve Position			
ID(S):	46322	46323	32125 32126
REGULATORY GUIDE CATEGORY: 1			
REGULATORY GUIDE TYPE: A			
QA TYPE: 1			
PLANT INSTRUMENT RANGE:		REGULATORY GUIDE INSTRUMENT RANGE:	
UPPER LIMIT:	1.00E+00	UPPER LIMIT:	1.00E+00
LOWER LIMIT:	0.00E+00	LOWER LIMIT:	0.00E+00
UNITS:	op/cl	UNITS:	op/cl
EQUIPMENT QUALIFICATION:		SEISMIC QUALIFICATION:	
EQ REQUIRED (Y/N):	Y	SEISMIC QUAL. REQUIRED (Y/N):	Y
EQ QUALIFIED (Y/N):	Y	SEISMICALLY QUALIFIED (Y/N):	Y
REDUNDANCY:			
REDUNDANCY REQUIRED (Y/N): Y			
REDUNDANT? (Y/N): Y			
POWER SUPPLY TYPE: 1		INDICATION:	
		CONTROL ROOM: 4	
		EOF: 7	
		TSC: 7	
NOTES:			
RHE 400A (B)			
Located on Mechanical Control Console C			
Flow Diagram - M217			
System - 23			
P.O. - K204			
Power Supply Drawings - F1374			
Control Room Indication - Indicating Lights			
EOF and TSC Indication - None			
INDICATION TYPES		POWER SUPPLY TYPES	
1 --	LOCAL READOUT	1 --	SAFETY GRADE
2 --	LOCAL RECORDER	2 --	HIGHLY RELIABLE
3 --	BOTH 1 & 2	3 --	OFFSITE POWER
4 --	REMOTE READOUT		
5 --	REMOTE RECORDER		
6 --	BOTH 4 & 5		
7 --	SEE NOTES		

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VARIABLE: ICS Injection Valves (ICS-5A(B), 6A(B))

ID(S):	46351	46353	46352	46354
	32066	32068	32067	32069

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: CP/C1

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: .

LOWER LIMIT: .

UNITS:

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Located on Mechanical Control Console C

Flow Diagram - M217

System - 23

P.O.-K-204

Valve	EQ	SQ	PS	
ICS 5A	Y	Y	1	46351; 32068
ICS 5B	Y	Y	1	46353; 32068
ICS 6A	Y	Y	1	46352; 32067
ICS 6B	Y	Y	1	46354; 32069

INDICATION TYPES

1 -- LOCAL READOUT

2 -- LOCAL RECORDER

3 -- BOTH 1 & 2

4 -- REMOTE READOUT

5 -- REMOTE RECORDER

6 -- BOTH 4 & 5

7 -- SEE NOTES

POWER SUPPLY TYPES

1 -- SAFETY GRADE

2 -- HIGHLY RELIABLE

3 -- OFFSITE POWER

VARIABLE: Pressurizer PCRV

ID(S): 46414 46415 31110 31109

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1/2

PLANT INSTRUMENT RANGE:	REGULATORY GUIDE INSTRUMENT RANGE:
UPPER LIMIT: 1.00E+00	UPPER LIMIT: 1.00E+00
LOWER LIMIT: 0.00E+00	LOWER LIMIT: 0.00E+00
UNITS: cl/ncl	UNITS: cl/ncl

EQUIPMENT QUALIFICATION:	SEISMIC QUALIFICATION:
EQ REQUIRED (Y/N): Y	SEISMIC QUAL. REQUIRED (Y/N): Y
EQ QUALIFIED (Y/N): Y	SEISMICALLY QUALIFIED (Y/N): Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Valves PR-2A and PR-2B

Flow Diagram - XK100-10

System - 36

Power Supply Drawings - E1523, E2301, E2301, E2300, E843, E233

Control Room Indication - Indicating Lights

EOF and TSC Indication - None

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

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VARIABLE: Pressurizer Block Valves

ID(S): 46412 46413 32089 32090

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1/2

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00

UNITS: cl/ncl

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: .

LOWER LIMIT: .

UNITS:

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N) : Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N) : Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N) : Y

RE DUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

FOF: 7

TSC: 7

NOTES:

Valves PR-1A and PR-1B

Flow Diagram - XK100-10

System - 36

P.O. - K100

Power Supply Drawings - E622, E796, E567

Control Room Indication - Indication Lights

EOF and TSC Indication - None

INDICATION TYPES

1 -- LOCAL READOUT

2 -- LOCAL RECORDER

3 -- BOTH 1 & 2

4 -- REMOTE READCUT

5 -- REMOTE RECORDER

6 -- BOTH 4 8 5

7 -- SEE NOTES

POWER SUPPLY TYPES

1 -- SAFETY GRADE

2 -- HIGHLY RELIABLE

3 -- OFFSITE POWER

VARIABLE: Steam Generator PORV Position

ID(S): 44585 44589 31170 31174

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1/2

PLANT INSTRUMENT RANGE: REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+00 UPPER LIMIT: 1.00E+00

LOWER LIMIT: 0.00E+00 LOWER LIMIT: 0.00E+00

UNITS: Cp/cl UNITS: op/cl

EQUIPMENT QUALIFICATION:

SEISMIC QUALIFICATION:

EQ REQUIRED (Y/N): Y

SEISMIC QUAL. REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): N

SEISMICALLY QUALIFIED (Y/N): N

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 2

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Located on Mechanical Vertical Panel A

Valves SD-3A(B)

The valves are seismically qualified. The valves' position indication is not seismically qualified.

System - 06

PO - K276

Control Room Indication - Indicating Lights

EOF and TSC Indication - None

INDICATION TYPES

1 -- LOCAL READOUT

2 -- LOCAL RECORDER

3 -- BOTH 1 & 2

4 -- REMOTE READOUT

5 -- REMOTE RECORDER

6 -- BOTH 4 & 5

7 -- SEE NOTES

POWER SUPPLY TYPES

1 -- SAFETY GRADE

2 -- HIGHLY RELIABLE

3 -- OFFSITE POWER

VARIABLE: Boric Acid Tank Level

ID(S): 4120501 4120502 4120503 4120504
4120601 4120602 4120603 4120604

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1

PLANT INSTRUMENT RANGE:	REGULATORY GUIDE INSTRUMENT RANGE:
UPPER LIMIT: 1.00E+02	UPPER LIMIT: 1.00E+02
LOWER LIMIT: 0.00E+00	LOWER LIMIT: 0.00E+00
UNITS: %	UNITS: %

EQUIPMENT QUALIFICATION:	SEISMIC QUALIFICATION:
EQ REQUIRED (Y/N): Y	SEISMIC QUAL. REQUIRED (Y/N): Y
EQ QUALIFIED (Y/N): Y	SEISMICALLY QUALIFIED (Y/N): Y

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 4

EOF: 7

TSC: 7

NOTES:

Located on Mechanical Control Console B

Transmitters - 24023, 24024, 24025, 24026, 24027, 24028,
24029

Tank Capacity - 4075 gallons

Indication is equivalent to a volume percent of 16.5% to
100% of the volume.

Flow Diagram - XK100-38

System - 35

P.O. - XK100, S.O. - 320, O.N. - 135085

Control Room Indication - Real Time Delay

EOF and TSC Indication - None

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- CFFSITE POWER

VARIABLE: Pressurizer Level

ID(S):	4122001	4122002	4122101	4230201
	24032	24031	24030	.

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: D

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+02

LOWER LIMIT: 0.00E+00

UNITS: %

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+02

LOWER LIMIT: 0.00E+00

UNITS: %

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): *

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 6

EOF: 6

TSC: 6

NOTES:

Located on Mechanical Control Console B

System - 36

Flow Diagram - XK100-10

P.O. - XK43901-2

Required Range - Top to Bottom

Instrument Range corresponds to a 269.5" W.C.

Pressurizer Length 356.83".

*The transmitter and the cabling to the relay room is seismically qualified. The cabling from the relay room to the indicator is not seismically qualified.

Control Room Readout - Real Time Display, Strip Chart, and Computer Print Out.

EOF AND TSC READOUT - COMPUTER PRINT OUT.

POWER SUPPLY DRAWINGS - E828, E788, E845, E233

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: Refueling Water Storage Tank Level	
ID(S): 4131101 4131102 24040 24062	
REGULATORY GUIDE CATEGORY: 2	
REGULATORY GUIDE TYPE: D	
QA TYPE: 2	
PLANT INSTRUMENT RANGE:	REGULATORY GUIDE INSTRUMENT RANGE:
UPPER LIMIT: 1.00E+02	UPPER LIMIT: 1.00E+02
LOWER LIMIT: 0.00E+00	LOWER LIMIT: 0.00E+00
UNITS: %	UNITS: %
EQUIPMENT QUALIFICATION:	SEISMIC QUALIFICATION:
EQ REQUIRED (Y/N): Y	SEISMIC QUAL. REQUIRED (Y/N): Y
EQ QUALIFIED (Y/N): Y	SEISMICALLY QUALIFIED (Y/N): N
REDUNDANCY:	
REDUNDANCY REQUIRED (Y/N): Y	
REDUNDANT? (Y/N): Y	
POWER SUPPLY TYPE: 2	INDICATION:
	CONTROL ROOM: 4
	EOF: 7
	TSC: 7
NOTES:	
Located on Mechanical Console C	
Flow Diagram - XK100-27	
P.O. - XK34233, XK100	
System - 33	
Level Tap is 6 inches off the bottom, this gives a volume range of approximately 1% to 100%.	
Transmitter 24040 is seismically qualified but its cabling to the control room is not.	
Transmitter 24062 is not seismically qualified.	
Control Room Readout - Real Time Display	
EOF and TSC Readouts - None	
Power Supply Drawings - E829, E700, E845, E233, E1722, E846	
INDICATION TYPES	POWER SUPPLY TYPES
1 -- LOCAL READOUT	1 -- SAFETY GRADE
2 -- LOCAL RECORDER	2 -- HIGHLY RELIABLE
3 -- BOTH 1 & 2	3 -- OFFSITE POWER
4 -- REMOTE READOUT	
5 -- REMOTE RECORDER	
6 -- BOTH 4 & 5	
7 -- SEE NOTES	

VARIABLE: Steam Generator Level (Narrow Range)

ID(S): 4104801 4104802 4104803 4105201
4105202 4105203 42560 .

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: E

QA TYPE: 1

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+02

LOWER LIMIT: 7.50E+01

UNITS: %

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+02

LOWER LIMIT: 0.00E+00

UNITS: %

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): *

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 6

EOF: 6

TSC: 6

NOTES:

On Mechanical Control Console A

Flow Diagram - M203

P.O. - XK34233

System - 5

R.G. 1.97 required Range from Tube Sheet to Separator.

Transmitter - 24042 24043 24044 24046 24047 24048

*The transmitters and cabling to relay room are seismically qualified. The cabling from relay room to indicator is not seismically qualified.

Control Room Indication - Real Time Display, Computer print out and Strip Chart.

EOF INDICATION - COMPUTER PRINT OUT.

TSC INDICATION - STRIP CHART AND COMPUTER PRINT OUT.

POWER SUPPLY DRAWINGS - E788, E763, E845, E233

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: CONTAINMENT TEMPERATURE

ID(S): 15293 15187

REGULATORY GUIDE CATEGORY: 2

REGULATORY GUIDE TYPE: D

QA TYPE: 3

PLANT INSTRUMENT RANGE: REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 3.85E+02 UPPER LIMIT: 4.00E+02

LOWER LIMIT: 2.00E+01 LOWER LIMIT: 4.00E+01

UNITS: DEG F UNITS: DEG F

EQUIPMENT QUALIFICATION: SEISMIC QUALIFICATION:

EQ REQUIRED (Y/N): Y SEISMIC QUAL. REQUIRED (Y/N): N

EQ QUALIFIED (Y/N): Y SEISMICALLY QUALIFIED (Y/N): N

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 2 INDICATION:

CONTROL ROOM: 7

EOF: 6

TSC: 7

NOTES:

INSTRUMENT 15293 IS READ OUT IN THE TSC.

INSTRUMENT 15187 IS READ OUT IN THE CONTROL ROOM.

FLOW DIAGRAM - M602

PO - 36519

SYSTEM - 18

THE INSTRUMENT IS SEISMICALLY QUALIFIED; HOWEVER, THE

CABLING IS NOT.

CONTROL ROOM - REAL TIME DISPLAY

EOF - NONE

TSC INDICATION - PRINTER

POWER SUPPLY DRAWINGS - E1790, E945, E3024, E3028

INDICATION TYPES POWER SUPPLY TYPES

1 -- LOCAL READOUT 1 -- SAFETY GRADE

2 -- LOCAL RECORDER 2 -- HIGHLY RELIABLE

3 -- BOTH 1 & 2 3 -- OFFSITE POWER

4 -- REMOTE READOUT

5 -- REMOTE RECORDER

6 -- BOTH 4 & 5

7 -- SEE NOTES

VARIABLE: Core Exit Thermocouples

ID(S): 42595 13115 13153 .

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: C

QA TYPE: 3

PLANT INSTRUMENT RANGE:	REGULATORY GUIDE INSTRUMENT RANGE:
UPPER LIMIT: 2.30E+03	UPPER LIMIT: 7.00E+02
LOWER LIMIT: +	LOWER LIMIT: 5.00E+01
UNITS: DEG F	UNITS: DEG F

EQUIPMENT QUALIFICATION:	SEISMIC QUALIFICATION:
EQ REQUIRED (Y/N): Y	SEISMIC QUAL. REQUIRED (Y/N): Y
EQ QUALIFIED (Y/N): Y	SEISMICALLY QUALIFIED (Y/N): N

REDUNDANCY:
REDUNDANCY REQUIRED (Y/N): Y
REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 2	INDICATION:
	CONTROL ROOM: 6
	EOF: 6
	TSC: 6

NOTES:

Located on Mechanical Vertical Panel C

P.O. - XK100

System - 55

Transmitter's ID - 13115 thru 13151 (39 transmitters)

+Minimum Temp. = Cont. Ambient Temp.

Control Room Readout - Real Time Display & Computer Printout

EOF Readout - Computer Printout

TSC Readout - Strip Chart, Printer and Computer Printout

Power Supply Drawings - E665, E780, E845, E233

System to be upgraded.

Upgrade was approved by the NRC in a letter dated
Nov. 30, 1984.

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: RCS Average Temperature Indication

ID(S): 4122401 4122402 4122501 4122502
15061 15062 15071 15072

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 1

PLANT INSTRUMENT RANGE:	REGULATORY GUIDE INSTRUMENT RANGE:
UPPER LIMIT: 6.29E+02	UPPER LIMIT: .
LOWER LIMIT: 5.20E+02	LOWER LIMIT: .
UNITS: DEG F	UNITS:

EQUIPMENT QUALIFICATION:	SEISMIC QUALIFICATION:
EQ REQUIRED (Y/N): Y	SEISMIC QUAL. REQUIRED (Y/N): Y
EQ QUALIFIED (Y/N): Y	SEISMICALLY QUALIFIED (Y/N): *

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 6

EOF: 6

TSC: 6

NOTES:

Located on Mechanical Control Console B

Flow Diagram - XK100-10

P.O. - XK100

System - 47

*The transmitter and the cabling from the transmitter to the relay room are seismically qualified. However, the cabling from the relay room to the indicator is not seismically qualified.

Power Supply Drawings - E789, E678, E845, E233

Control Room Indication - Real Time Display and Computer Printout

EOF and TSC Indications - Computer Printout

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: RCS Cold Leg Water Temperature

ID(S): 42555 4255501 4255502 15124
15126 - - -

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: E

QA TYPE: 1/3

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 6.50E+02

LOWER LIMIT: 5.00E+01

UNITS: DEG F

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 7.00E+02

LOWER LIMIT: 5.00E+01

UNITS: DEG F

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): *

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 2

INDICATION:

CONTROL ROOM: 6

EOF: 6

TSC: 6

NOTES:

Located on Mechanical Vertical Panel A

Flow Diagram - XK100-10

P.O. - XK100

System - 36

*The instrument and the cabling from the instrument to the relay room are seismically qualified. The cabling from the relay room to the control room is not seismically qualified.

EOF and TSC Readouts via Computer Link

Power Supply Drawings - E2562, E701

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: RCS Hot Leg Water Temperature

ID(S): 42501 4250101 4250102 15123
15125 . . .

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: E

QA TYPE: 1/3

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 6.50E+02

LOWER LIMIT: 5.00E+01

UNITS: Deg. F

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 7.00E+02

LOWER LIMIT: 5.00E+01

UNITS: DEG. F

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): Y

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): *

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 2

INDICATION:

CONTROL ROOM: 6

EOF: 6

TSC: 6

NOTES:

Located on Mechanical Vertical Panel A

Flow Diagram - XK100-10

P.O. - XK390

System - 54

RCS system design temperature - 650F (FSAR Table 4.1-6)

Power Supply Drawings - E829, E782, E702, E845, E233, E785
E3326

The transmitters and the cabling from the transmitters to
the relay room are seismically qualified. The cabling from
the relay room to the control room is not.

Control Room Indication - Strip Chart and Computer Printout
EOF and TSC Indications - Computer Printout

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

VARIABLE: Containment Hydrogen Concentration				
ID(S):	41615 25019	41616 25020	64103 .	64153 .
REGULATORY GUIDE CATEGORY: 1				
REGULATORY GUIDE TYPE: C				
QA TYPE: 1				
PLANT INSTRUMENT RANGE:		REGULATORY GUIDE INSTRUMENT RANGE:		
UPPER LIMIT: 1.00E+01		UPPER LIMIT: 1.00E+01		
LOWER LIMIT: 0.00E+00		LOWER LIMIT: 0.00E+00		
UNITS: %		UNITS: %		
EQUIPMENT QUALIFICATION:		SEISMIC QUALIFICATION:		
EQ REQUIRED (Y/N): Y		SEISMIC QUAL. REQUIRED (Y/N): Y		
EQ QUALIFIED (Y/N): Y		SEISMICALLY QUALIFIED (Y/N): N		
REDUNDANCY:				
REDUNDANCY REQUIRED (Y/N): Y				
REDUNDANT? (Y/N): Y				
POWER SUPPLY TYPE: 1		INDICATION:		
		CONTROL ROOM: 6		
		EOF: 7		
		TSC: 7		
NOTES:				
Located on Mechanical Vertical Panel A				
Flow Diagram - M403				
P.O. - XK05585				
System - 18				
Transmitter is seismically qualified; however, cabling from				
transmitter to control room indicator is not.				
Control Room Indication - Real Time Display				
EOF and TSC Indication - None				
A display is also located outside the high radiation sample				
room.				
INDICATION TYPES		POWER SUPPLY TYPES		
1 -- LOCAL READOUT		1 -- SAFETY GRADE		
2 -- LOCAL RECORDER		2 -- HIGHLY RELIABLE		
3 -- BOTH 1 & 2		3 -- OFFSITE POWER		
4 -- REMOTE READOUT				
5 -- REMOTE RECORDER				
6 -- BOTH 4 & 5				
7 -- SEE NOTES				

05/05/86

VARIABLE: Condenser Airborne Releases R-15

ID(S): 81009 29004

REGULATORY GUIDE CATEGORY: 2

REGULATORY GUIDE TYPE: E

QA TYPE: 3

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E-03

LOWER LIMIT: 1.00E-06

UNITS: uCI/CC

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: 1.00E+05

LOWER LIMIT: 1.00E-06

UNITS: uCI/CC

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): N

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): N

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): N

POWER SUPPLY TYPE: 1

INDICATION:

CONTROL ROOM: 6

EOF: 6

TSC: 6

NOTES:

Located on Mechanical Vertical Panel C

R-15: Condenser Air Ejector Gas Monitor

System - 45

P.O. - XK100-1305, 1306

Control Room Indication - Real Time Display, Strip Chart,
and Computer Print Out.

EOF and TSC Indication - Computer Print Out.

Power Supply Drawings - E2426, E2425, E2424, E845, E233

INDICATION TYPES

- 1 -- LOCAL READOUT
- 2 -- LOCAL RECORDER
- 3 -- BOTH 1 & 2
- 4 -- REMOTE READOUT
- 5 -- REMOTE RECORDER
- 6 -- BOTH 4 & 5
- 7 -- SEE NOTES

POWER SUPPLY TYPES

- 1 -- SAFETY GRADE
- 2 -- HIGHLY RELIABLE
- 3 -- OFFSITE POWER

TABLE: Steam Generator Blowdown Radiation Monitor (R-19)

ID(S): 81013 29005 .

REGULATORY GUIDE CATEGORY: 1

REGULATORY GUIDE TYPE: A

QA TYPE: 3 .

PLANT INSTRUMENT RANGE:

UPPER LIMIT: 1.00E-02

LOWER LIMIT: 1.00E-05

UNITS: uCi/cc

REGULATORY GUIDE INSTRUMENT RANGE:

UPPER LIMIT: .

LOWER LIMIT: .

UNITS:

EQUIPMENT QUALIFICATION:

EQ REQUIRED (Y/N): Y

EQ QUALIFIED (Y/N): N

SEISMIC QUALIFICATION:

SEISMIC QUAL. REQUIRED (Y/N): Y

SEISMICALLY QUALIFIED (Y/N): N

REDUNDANCY:

REDUNDANCY REQUIRED (Y/N): Y

REDUNDANT? (Y/N): Y

POWER SUPPLY TYPE: 2

INDICATION:

CONTROL ROOM: 6

EOF: 6

TSC: 6

NOTES:

Located on Mechanical Vertical Panel C

System - 45

Flow Diagram - M219

Control Room Indication - Real Time Display, Computer Print
Out and Strip Chart.

EOF and TSC Indication - Computer Print Out.

INDICATION TYPES

1 -- LOCAL READOUT

2 -- LOCAL RECORDER

3 -- BOTH 1 & 2

4 -- REMOTE READOUT

5 -- REMOTE RECORDER

6 -- BOTH 4 & 5

7 -- SEE NOTES

POWER SUPPLY TYPES

1 -- SAFETY GRADE

2 -- HIGHLY RELIABLE

3 -- OFFSITE POWER

Attachment 3

To Letter from
D. C. Hintz (WPSC) to G. E. Lear (NRC)

Dated May 30, 1986

Instrument	Recommendations
Auxiliary Feedwater (AFW) Flow Indication	1) The cabling for the instrument should be seismically qualified. 2) The instrument has been qualified in accordance with NUREG 0737.
Aux FW motor driven pump breaker position indication	This instrument has been replaced by the auxiliary feedwater flow instrumentation.
Aux FW turbine driven pump steam supply valves' position indication:	None
MS-100A MS-100B MS-102	
AC emergency bus power indication (1-5, 1-6)	None
Boric acid tank level	None
Component cooling valves' position indication:	
CC-400A(B) CC-600 CC-601A(B) CC-610A(B)	None None None Valve should be environmentally qualified. - recommendation placed on hold until WOG report on RCP seal failure is issued. None
CC-612A(B)	
Component cooling water pump breaker position indication	None
Condenser airborne releases (R-15)	1) The RG 1.97 Review Committee has decided to retain this instrument on the RG 1.97 list. 2) The instrument should be environmentally qualified. 3) The instrument should be seismically qualified. 4) The power supply should be upgraded from a RG type 2 to a RG type 1.
Containment fan coil breaker position indication	None

Instrument	Recommendations
Containment fan coil SW valves' position indication [SW-903A(B)(C)(D)]	None
Containment Hydrogen Concentration	The cabling from the analyzer to the control room should be rerouted in seismically qualified trays.
Containment Isolation Valves' position indication	
- Containment - AS-1 - AS-2 - AS-3	None, since the limit switches for these valves are to be replaced by the end of the 1988 refueling outage per DCR 1522 and all noncompliances associated with RG 1.97 will be corrected.
CVC-54	None
MDR-323A(B)	None
VB-10A(B)	None
WG-310	None
WG-311	None
- CVC letdown - LD-4A(B)(C)	None
LD-6	None
- Excess letdown - CC-653	None
- Instrument Air - IA-101	The instrument has been deleted from the list since it is no longer considered a containment isolation valve.
- ICS - ICS-201, 202	The limit switches should be upgraded to meet the seismic qualification criteria.

Instrument	Recommendations
- Primary Sampling RC-402	None
RC-403	None, since the limit switches for these valves are to be replaced by the end of the 1988 refueling outage per DCR 1522 and all noncompliances associated with RG 1.97 will be corrected.
RC-412	None
RC-413	None, since the limit switches for these valves are to be replaced by the end of the 1988 refueling outage per DCR 1522 and all noncompliances associated with RG 1.97 will be corrected.
RC-422	None
RC-433	None
- Purge and Ventilation RBV-1,2,3,4	None
RBV-5 TAV-12	The valves were deleted from the list of RG 1.97 variables because: 1. Their containment Isolation function is accomplished by RBV-1, 2, 3, and 4. 2. The valves are normally closed and fail closed valves; therefore, they would not be required to change position during an accident.
- PRT MG(R)-512, 513 MU-1010-1	None, since the limit switches for these valves are to be replaced by the end of the 1988 refueling outage per DCR 1522 and all noncompliances associated with RG 1.97 will be corrected.
NG-302	None
- RCDT MG(R)-503 MG(R)-504	The valve's limit switches should be upgraded to meet the seismic qualification criteria.
MG(R)-509 MG(R)-510 RC-507 RC-508	None, since the limit switches for these valves are to be replaced by the end of the 1988 refueling outage per DCR 1522 and all noncompliances associated with RG 1.97 will be corrected.

Instrument	Recommendations
- RCP CVC-211, 212	None
- Steam Generator BT-2A(B)	None
BT-3A(B)	None
BT-31A(B)	None
BT-32A(B)	None, since the limit switches for these valves are to be replaced by the end of the 1988 refueling outage per DCR 1522 and all noncompliances associated with RG 1.97 will be corrected.
- Sump A MD(R)-134 MD(R)-135	None, since the limit switches for these valves are to be replaced by the end of the 1988 refueling outage per DCR 1522 and all noncompliances associated with RG 1.97 will be corrected.
- SI ACC N ₂ Supply NG-107	None
Containment pressure (0-60)	None
Core exit temp.	None, all noncompliances will be corrected by DCR 1163.
Containment temperature indication	1) The power supply should be upgraded from a RG type 2 to RG type 1. 2) The cabling for the indication should be seismically qualified. 3) The instrument should be environmentally qualified.
Feedwater bypass regulating valve [FW-10A(B)] position indication	1) The instrument should be seismically qualified. 2) The power supply should be upgraded from RG type 2 to RG type 1.
Feedwater regulating valve [FW-7A(B)] position indication	1) The instrument should be seismically qualified. 2) The power supply should be upgraded from a RG type 2 to a RG type 1.

Instrument	Recommendations
FW isolation valves	None
ICS pump breaker position indication	None
ICS injection valves position indication: ICS-5A(B) ICS-6A(B)	None
ICS recirculation valve position indication [RHR-400A(B)]	None
Main steam flow	None
Main steam isolation valves' position indication [MS-1A(B)]	1) The cabling from limit switches to control room should be changed to safeguards cabling or routed in seismically qualified trays. 2) The cabling from the limit switches to the power supply should be changed to safeguards cabling.
Main steam bypass valves' position indication [MS-2A(B)]	1) The instrument should be environmental qualified. 2) The seismic qualification should be documented.
Neutron Flux Source Range Int. Range Power Range	The source and intermediate ranges should be upgraded to meet seismic and environmental qualification criteria.
Pressurizer block valves' position indication [PR-2A(B)]	None
Pressurizer level	None
Pressurizer PORV position indication [PR-1A(B)]	None

Instrument	Recommendations
Reactor trip and bypass breakers' position indication	None
Refueling water storage tank level	1) The cabling from the transmitters to control room should be changed to safeguards cabling, or existing cabling should be routed in seismically qualified trays. 2) Transmitter 24062 should be environmentally and seismically qualified.
RCS cold leg temp.	The cabling from transmitters to power supply should be changed to safeguards cabling.
RCS hot leg pressure	1) The cabling from transmitter to control room should be routed in seismically qualified trays or be changed to safeguards cabling. 2) The cabling from transmitters to power supply should be changed to safeguards cabling.
RCS hot leg temp.	The cabling from transmitters to power supply should be changed to safeguards cabling.
RCS loop flow	The instrument should be environmentally qualified.
RCS loop tave	All noncompliances will be corrected by DCR 1521.
RCS pressure (PRZR press.)	None
RHR pump indication	None