

*Central Files*

# INDIANA & MICHIGAN ELECTRIC COMPANY

P. O. BOX 18  
BOWLING GREEN STATION  
NEW YORK, N. Y. 10004

June 5, 1980  
AEP:NRC:00356B

Donald C. Cook Nuclear Plant Unit Nos. 1 and 2  
Docket Nos. 50-315 and 50-316  
License Nos. DPR-58 and DPR-74  
IE Bulletin 79-01B

Mr. J. G. Keppler, Regional Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Region III  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

Attachments 1 and 2 to this letter contain corrected and/or additional pages which should be incorporated into Attachments 5 and 6 to our second set of responses (AEP:NRC:00356A) to IE Bulletin 79-01B entitled, "Environmental Qualification of Class IE Equipment" which was submitted on May 7, 1980.

Very truly yours,



R. S. Hunter  
Vice President

cc: (with attachment)  
N. C. Moseley - NRC  
D. V. Shaller - Bridgman

cc: (without attachment)  
R. C. Callen  
G. Charnoff  
J. E. Dolan  
R. W. Jurgensen

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non

*AO/E*

*GP*



STATE OF NEW YORK  
COUNTY OF NEW YORK

R. S. Hunter being duly sworn, deposes and says he is the Vice President of licensee Indiana & Michigan Electric Company, that he has read the foregoing third response to NRC IE Bulletin 79-01B and knows the contents thereof; and the said contents are true to the best of his knowledge and belief.



Subscribed and sworn to before me this 5<sup>th</sup> day of June, 1980.



GREGORY M. GURICAN  
Notary Public, State of New York  
No. 31-4643431  
Qualified in New York County  
Commission Expires March 30, 1981

Notary Public

Attachment 1  
To  
AEP:NRC:00356B

To be inserted into Attachment 5 to  
AEP:NRC:00356A

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: ESW	Operating Time	1 day		WCAP 9600			
PLANT ID NO: WPS702,706	Temperature (°F)	Fig 0-27	See note below	FSAR App 0			
COMPONENT: Pressure Switch MANUFACTURER: Mercoid	Pressure (PSIA)	Fig 0-27	See note below	FSAR App 0			
MODEL NUMBER: DA-7031-153	Relative Humidity (%)	NA	NA	NA	NA	NA	
FUNCTION: Auto. Pump Start ACCURACY: SPEC: NA DEMON: NA	Chemical Spray	NA	NA	NA	NA	NA	
SERVICE: ESW pressure	Radiation (10 <sup>6</sup> rads)	NA	NA	NA	NA	NA	
LOCATION: Outside Containment	Aging (years)						
FLOOD LEVEL ELEV: NA ABOVE FLOOD LEVEL: NA	Submergence	NA	NA	NA	NA	NA	

\*Documentation References:

Notes: Justification for not having these switches qualified is as follows: The normally closed contact of these switches allows automatic starting of the ESW pump motors. Should the accident disable the switch making its contact go open (and stay open), the motor can be started by manually placing the control switch in the "close" position. We intend to replace these switches with ones that are qualified to survive the HELB environment.

DONALD C. COOK NUCLEAR PLANT UNIT NO. 1

DOCKET NO. 50-316

LICENSE NO. DPR-74

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: Reactor Coolant	Operating Time		30 DAYS		43	Seq.	
PLANT ID NO: Same as valve served	Temperature (°F)	Fig 022.9-1, -2	340	FSAR APP 9	43	Seq.	
COMPONENT: Limit Switch	Pressure (PSIA)	Fig 1 Fig 2	84.7	ROW 6504	43	Seq.	
MANUFACTURER: NAMCO	Relative Humidity (%)	100	100		43	Seq.	
MODEL NUMBER: EA 180 *	Chemical Spray	2000 ppmB	3000 ppmB	T.S. 314.5 314.56	43	Seq.	
FUNCTION: valve position indication	Radiation (10 <sup>6</sup> rads)		204	WCAP 7410-L Vol 1	43	Seq.	
ACCURACY: SPEC: NA DEMON: NA	Aging (years)		200hrs/200°F Yes		43	Seq.	
SERVICE: Per PORV's: NRV-151, 152, -153	Submergence	NA	NA	NA	NA	NA	
LOCATION: IN Containment							
FLOOD LEVEL ELEV: 614'							
ABOVE FLOOD LEVEL: yes							

\*Documentation References:

Notes:

43. Acme-Cleveland Development Co: Qual of Namco Controls  
Limit Switch, Sept 5, 1978

\* to be installed as per NUREG 578

from Ref. 43. QUAL. OF NAMCO CONTROLS Limit Switch

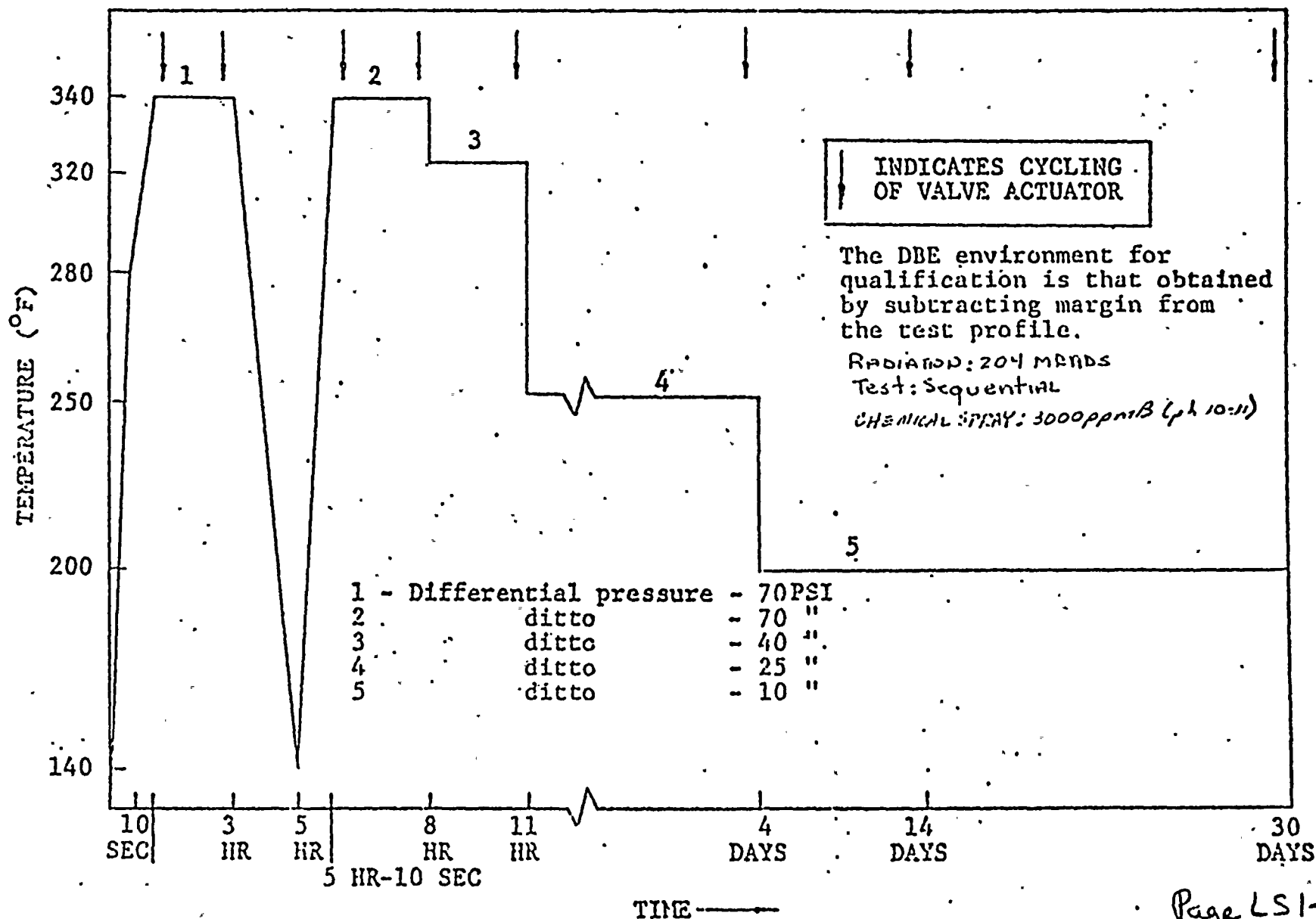


Fig 1  
 Test Chamber Temperature Profile for Accident Environment Simulation

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: CYCS, SI, RHR PLANT ID NO: PP-050,026, 035 COMPONENT: Pump Motor MANUFACTURER: WESTINGHOUSE MODEL NUMBER: 5808Z, 5009H, 5009-P24 FUNCTION: Emergency Core Cooling ACCURACY: SPEC: NA DEMON: NA SERVICE: Centrifugal Charging, Safety Injection & Residual Heat Removal Pumps LOCATION: Outside Containment FLOOD LEVEL ELEV: NA ABOVE FLOOD LEVEL: NA	Operating Time	1 year			See Note B.		
	Temperature (°F)	NA	NA	NA	NA	NA	
	Pressure (PSIA)	NA	NA	NA	NA	NA	
	Relative Humidity (%)	NA	NA	NA	NA	NA	
	Chemical Spray	NA	NA	NA	NA	NA	
	Radiation (10 <sup>6</sup> rads)	16.6	200	See Note A	See Note B	Similarity to TESTED Equipment	
	Aging (years)		200°C/500hrs YES		See Note B	TEST	
FLOOD LEVEL ELEV: NA ABOVE FLOOD LEVEL: NA	Submergence	NA	NA	NA	NA	NA	

\*Documentation References:

Notes:

- A) AEPSC NS&L calculations DC-N-6520-2.
- B) Westinghouse Test Report WCAP 7829.  
 letter of LFCASO(AEP) to F.Noon(WEL) of 3-20-80.  
 letter of F.Noon(WEL) to LFCASO(AEP) of 4-21-80.



DONALD C. COOK NUCLEAR PLANT UNIT NO. 1

DOCKET NO. 50-316

LICENSE NO. DPR-74

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: Containment Spray	Operating Time	1 year					
PLANT ID NO: PP-009	Temperature (°F)	NA	NA	NA	NA		
COMPONENT: Pump Motor	Pressure (PSIA)	NA	NA	NA	NA		
MANUFACTURER: Reliance	Relative Humidity (%)	NA	NA	NA	NA		
MODEL NUMBER: frame # 5810 P	Chemical Spray	NA	NA	NA	NA		
FUNCTION: CT Spray	Radiation (10 <sup>6</sup> rads)	17	100	AEPSC NS&L Calc. DC-11- 6420-2	see note below	similarity to tested materials	see note below
ACCURACY: SPEC: NA DEMON: NA	Aging (years)						
SERVICE: Containment Spray Pump	Submergence	NA	NA	NA	NA		
LOCATION: Outside CT							
FLOOD LEVEL ELEV: NA							
ABOVE FLOOD LEVEL: NA							

\*Documentation References:

Notes: Information received by telephone from manufacturer.  
Letter of confirmation expected.

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: MAIN FEEDWATER & CONTAINMENT ISOLATION PLANT ID NO: FKV-210, 220, 230 & 240 COMPONENT: DIAPHRAM FOR AIR OPERATOR MANUFACTURER: FISHER CONTROLS CO. MODEL NUMBER: 667 FUNCTION: SHUTOFF & REGULATION ACCURACY: SPEC: FAIL CLOSED DEMON: FAIL CLOSED SERVICE: FEEDWATER FLOW REGULATION LOCATION: OUTSIDE CONTAINMENT FLOOD LEVEL ELEV: N/A ABOVE FLOOD LEVEL: N/A	Operating Time						
	Temperature (°F)						
	Pressure (PSIA)						
	Relative Humidity (%)						
	Chemical Spray						
	Radiation (10 <sup>6</sup> rads)						
	Aging (years)						
	Submergence						

\*Documentation References:

Notes:

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: FRV-210,220,230, & 240 PLANT ID NO: EPT 210,220, 230 & 240 COMPONENT: ELECTRO- PNEUMATIC TRANSDUCER MANUFACTURER: FISHER CONTROLS COMPANY MODEL NUMBER: 546 FUNCTION: VALVE MODULATION CONTROL ACCURACY: SPEC: FUNCTIONAL DEMON: FUNCTIONAL SERVICE: MAIN FEEDWATER FLOW CONTROL LOCATION: OUTSIDE CONTAINMENT FLOOD LEVEL ELEV: NA ABOVE FLOOD LEVEL: NA	Operating Time	NA	NA	EMRGY PRDCS	ENGRG ADJMT		NONE
	Temperature (°F)	223	320/288	FIG 0-26	MNFTR LIT	SEQUENTIAL	NONE
	Pressure (PSIA)	20.5	90/59	FIG 0-26	MNFTR LIT	SEQUENTIAL	NONE
	Relative Humidity (%)	100	100	FIG 0-26	MNFTR LIT	SEQUENTIAL	NONE
	Chemical Spray	NA	NA				NONE
	Radiation (10 <sup>6</sup> rads)	NA	NA				NONE
	Aging (years)						
FLOOD LEVEL ELEV: NA ABOVE FLOOD LEVEL: NA	Submergence	NA	NA				NONE

\*Documentation References: FSAR APPENDIX D.

MNFTR LIT - FISHER CONTROLS COMPANY  
 OPERATIONAL TESTS OF FISHER  
 TYPE 546 ELECTRO-PNEUMATIC TRANSDUCER

Notes: The subject transducer is  
 not required for the FRV to  
 perform its safety function in  
 the case of a LOCA or H<sub>2</sub>

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: MAIN STEAM & CONTAINMENT ISOLATION  PLANT ID NO: MRV 213, 223, 233 & 243  COMPONENT: DIAPHRAM FOR AIR OPERATOR MANUFACTURER: FISHER CONTROLS CO. MODEL NUMBER: 667 FUNCTION: PRESSURE RELIEF ACCURACY: SPEC: FAIL CLOSED DEMON: FAIL CLOSED  SERVICE: MAIN STEAM PRESSURE RELIEF LOCATION: OUTSIDE CONTAINMENT  FLOOD LEVEL ELEV: N/A ABOVE FLOOD LEVEL: N/A	Operating Time						
	Temperature (°F)						
	Pressure (PSIA)						
	Relative Humidity (%)						
	Chemical Spray						
	Radiation (10 <sup>6</sup> rads)						
	Aging (years)						
	Submergence						

\*Documentation References:

Notes:

No credit is taken for  
 the subject MRV's (the Steam Generator  
 PORV's) in LOCA or HEB accident analysis.

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: MRV-213, 223, 733 & 243 PLANT ID NO: EPT-213, 223, 232 & 243 COMPONENT: ELECTRO- PNEUMATIC TRANSDUCER MANUFACTURER: FISHER CONTROLS CO. MODEL NUMBER: 546 FUNCTION: VALVE MODIFICATION CONTROL ACCURACY: SPEC: FUNCTIONAL DEMON: FUNCTIONAL SERVICE: MAIN STEAM PRESSURE RELIEF LOCATION: OUTSIDE ENVIRONMENT FLOOD LEVEL ELEV: NA ABOVE FLOOD LEVEL:	Operating Time	NA	NA	EMRGY PROC	ENGRG ADJMT		NONE
	Temperature (°F)	230	320/280	FIG 0-27	MNFTK LIT	SEQUENTIAL	NONE
	Pressure (PSIA)	26.2	90/59	FIG 0-27	MNFTK LIT	SEQUENTIAL	NONE
	Relative Humidity (%)	100	100	FIG 0-27	MNFTK LIT	SEQUENTIAL	NONE
	Chemical Spray	NA	NA				NONE
	Radiation (10 <sup>6</sup> rads)	NA	NA				NONE
	Aging (years)						
	Submergence	NA	NA				NONE

\*Documentation References: FSNE APPENDIX D

MNFTK LIT. FISHER CONTROLS COMPANY  
 OPERATIONAL TESTS OF FISHER  
 TYPE 546 ELECTRO-PNEUMATIC  
 TRANSDUCER

Notes: No credit is taken for the subject  
 MRV's (the Steam Generator PORV's)  
 for LOCA or HELB accident analysis.

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: REACTOR COOLANT  PLANT ID NO: NRV-151 152 & 153  COMPONENT: DIAPHRAM FAIR FAIR OPERATOR MANUFACTURER: MASON EILAN MODEL NUMBER: 37 AND 38 FUNCTION: PRESSURE RELIEF ACCURACY: SPEC: FAIL CLOSED DEMON: FAIL CLOSED  SERVICE: PRESSURIZER POWER OPERATED RELIEF VALVE LOCATION: INSIDE CONFINEMENT  FLOOD LEVEL ELEV: 614' ABOVE FLOOD LEVEL: YES	Operating Time						
	Temperature (°F)						
	Pressure (PSIA)						
	Relative Humidity (%)						
	Chemical Spray						
	Radiation (10 <sup>6</sup> rads)						
	Aging (years)						
	Submergence						

\*Documentation References:

Notes:

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: NRV-151 NRY-152 NRV-143	Operating Time	NA	NA	NA	SEE NOTE		NONE
PLANT ID NO: XSD-503 XSD-505 XSD-507	Temperature (°F)	328.2	SEE TEST PROFILE	FIG 022.9-1E-2	REF. 29	SEQUENTIAL	NONE
COMPONENT: SOLENOID VALVE MANUFACTURER: AUTOMATIC SWITCH COMPANY MODEL NUMBER: NP-831654V	Pressure (PSIA)	35.5	SEE TEST PROFILE	N13.8			
	Relative Humidity (%)	100	100	7.5			
FUNCTION: TRIP CONTROL VALVE CLOSED ACCURACY: SPEC: FUNCTIONAL DEMON: FUNCTIONAL	Chemical Spray	1.14% BORIC ACID & .15% NaOH	5000 PPM BORIC ACID WITH NaOH NA <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	N 53.6			
SERVICE: PRESSURIZER PRESSURE CONTROL	Radiation (10 <sup>6</sup> rads)	40	150	REF. 30			
LOCATION: INSIDE CONTAINMENT	Aging (years)		4				
FLOOD LEVEL ELEV: 614'-0" ABOVE FLOOD LEVEL: YES	Submergence	NA	NA	NA	REF. 30	ENGINEERING DRAWING REVIEW	

\*Documentation References: UNLESS OTHERWISE NOTED ALL REFERENCES ARE FOR SECTIONS.  
BY AUTOMATIC SWITCH COMPANY  
KIDRI AAS 21678/TR.

Notes: FUNCTION OF THESE DEVICES IS NOT ASSUMED BY ADVERSE ENVIRONMENT ACCIDENT ANALYSIS. SEE GENERAL NOTE 4.

REF. 30 - WESTINGHOUSE ELECTRIC CORP.  
COMMUNICATIONS NS-TMA-1950.

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: MKV 211, 212, 221, 222, 231, 232, 241 & 242 PLANT ID NO: XSO-211, 212, 221, 222, 231, 232, 241 & 242 COMPONENT: SOLENOID MANUFACTURER: AUTOMATIC SWITCH CO. MODEL NUMBER: HT 8316 B17 FUNCTION: CLOSURE ACTUATION: ACCURACY: SPEC: FUNCTIONAL DEMON: FUNCTIONAL SERVICE: STEAM GENERATOR STOP VALVE DUMP VALVE LOCATION: OUTSIDE CONTAINMENT FLOOD LEVEL ELEV: N A ABOVE FLOOD LEVEL:	Operating Time	5 SEC	5 SEC	14.2.5	TECH SPEC 3.7.1.5	RESPONSE TIME TESTING	NONE
	Temperature (°F)	230	180	FIG 0-27	MFTK LIT		NONE (L)
	Pressure (PSIA)	26.2	14.7	FIG 0-27	MFTK LIT		NONE (L)
	Relative Humidity (%)	100	0	7.5	MFTK LIT		NONE (L)
	Chemical Spray	NA	NA				NA
	Radiation (10 <sup>6</sup> rads)	NA	NA				NA
	Aging (years)						
FLOOD LEVEL ELEV: N A ABOVE FLOOD LEVEL:	Submergence	NA	NA				NA

## \*Documentation References:

MFTK LIT - AUTOMATIC SWITCH CO.  
 CATALOG NO 30  
 BULLETIN 8316

Notes: 14.2.5 & 14.2.8 ARE THE ADVERSE ENVIRONMENTAL ACCIDENT ANALYSIS FOR WHICH CREDIT IS ASSUMED FOR OPERATION OF THE DEVICE.

(L) ACCIDENT ANALYSIS Q212.25 SHOWS THAT MAIN STEAM LINE BREAK PLUS THE FAILURE OF ANOTHER STEAM LINE TO ISOLATE IS ACCEPTABLE. SINCE THE LOCATION OF THESE DEVICES IS SUCH THAT ONLY TWO STEAM GENERATOR STOP VALVES CAN BE AFFECTED BY ANY ONE BREAK. USE OF <sup>Page 57</sup> CONTROL GUIDE DEVICES IS ACCEPTABLE



EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: MAIN STEAM & CONTAINMENT ISOLATION PLANT ID NO: MRV 213, 223, 233 & 243 COMPONENT: DIAPHRAM FOR AIR OPERATOR MANUFACTURER: FISHER CONTROLS CO. MODEL NUMBER: 667 FUNCTION: PRESSURE RELIEF ACCURACY: SPEC: FAIL CLOSED DEMON: FAIL CLOSED SERVICE: MAIN STEAM PRESSURE RELIEF LOCATION: OUTSIDE CONTAINMENT	Operating Time						
	Temperature (°F)						
	Pressure (PSIA)						
	Relative Humidity (%)						
	Chemical Spray						
	Radiation (10 <sup>6</sup> rads)						
	Aging (years)						
FLOOD LEVEL ELEV: N/A ABOVE FLOOD LEVEL:	Submergence						

\*Documentation References:

Notes:

No credit is taken for the subject MRV's (the Steam Generator & ORV's) in LOCA or HEI-B accident analysis.

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: MRV-213, 223, 733 & 243 PLANT ID NO: EPT-213, 223, 233 & 243 COMPONENT: ELECTRO- PNEUMATIC TRANSDUCER MANUFACTURER: FISHER CONTROLS CO. MODEL NUMBER: 546 FUNCTION: VALVE MODIFICATION CONTROL ACCURACY: SPEC: FUNCTIONAL DEMON: FUNCTIONAL SERVICE: MAIN STEAM PRESSURE RELIEF LOCATION: OUTSIDE ENVIRONMENT FLOOD LEVEL ELEV: NA ABOVE FLOOD LEVEL:	Operating Time	NA	NA	EMRGY PROC	ENGRG ADJMT		NONE
	Temperature (°F)	230	320/288	FIG 0-27	MNFTK LIT	SEQUENTIAL	NONE
	Pressure (PSIA)	26.2	90/59	FIG 0-27	MNFTK LIT	SEQUENTIAL	NONE
	Relative Humidity (%)	100	100	FIG 0-27	MNFTK LIT	SEQUENTIAL	NONE
	Chemical Spray	NA	NA				NONE
	Radiation (10 <sup>6</sup> rads)	NA	NA				NONE
	Aging (years)						
	Submergence	NA	NA				NONE

\*Documentation References: FSNE APPENDIX D  
 MNFTK LIT. FISHER CONTROLS COMPANY  
 OPERATIONAL TESTS OF FISHER  
 TYPE 546 ELECTRO-PNEUMATIC  
 TRANSDUCER

Notes: No credit is taken for the subject  
 MRV's (like Steam Generator PORV's)  
 for LOCA or HELB accident analysis.



EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: REACTOR COOLANT  PLANT ID NO: NRV-151 152 & 153  COMPONENT: DIAPHRAGM FAIL AIR OPERATOR MANUFACTURER: MASONIELAN MODEL NUMBER: 37 AND 38 FUNCTION: PRESSURE RELIEF ACCURACY: SPEC: FAIL CLOSED DEMON: FAIL CLOSED  SERVICE: PRESSURIZER POWER OPERATED RELIEF VALVE LOCATION: INSIDE : MOUNTAIN  FLOOD LEVEL ELEV: 614' ABOVE FLOOD LEVEL: YES	Operating Time						
	Temperature (°F)						
	Pressure (PSIA)						
	Relative Humidity (%)						
	Chemical Spray						
	Radiation (10 <sup>6</sup> rads)						
	Aging (years)						
	Submergence						

SEE VCR-11 &amp; 21

\*Documentation References:

Notes:

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: NRV-151 NRV-152 NRV-153	Operating Time	NA	NA	NA	SEE NOTE		NONE
PLANT ID NO: XSD-503 XSD-505 XSD-507	Temperature (°F)	328.2	SEE TEST PROFILE	FILE 022.9-1E-2	REF. 29	SEQUENTIAL	NONE
COMPONENT: SOLENOID VALVE MANUFACTURER: AUTOMATIC CONTROL COMPANY MODEL NUMBER: NP-831654V	Pressure (PSIA)	35.5	SEE TEST PROFILE	N13.8	II	II	II
	Relative Humidity (%)	100	100	7.5	II	II	II
FUNCTION: TRIP CONTROL VALVE CLOSED ACCURACY: SPEC: FUNCTIONAL DEMON: FUNCTIONAL	Chemical Spray	1.14% BORIC ACID & .15% NaOH	5000 TPA BORIC ACID WITH NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	N 5.3.6	II	II	II
SERVICE: PRESSURIZER PRESSURE CONTROL	Radiation (10 <sup>6</sup> rads)	40	150	REF. 30	II	II	II
LOCATION: INSIDE CONTAINMENT	Aging (years)		4		II	II	II
FLOOD LEVEL ELEV: 614'-0" ABOVE FLOOD LEVEL: YES	Submergence	NA	NA	NA	REF. 30	ENGINEERING DRAWING REVIEW	

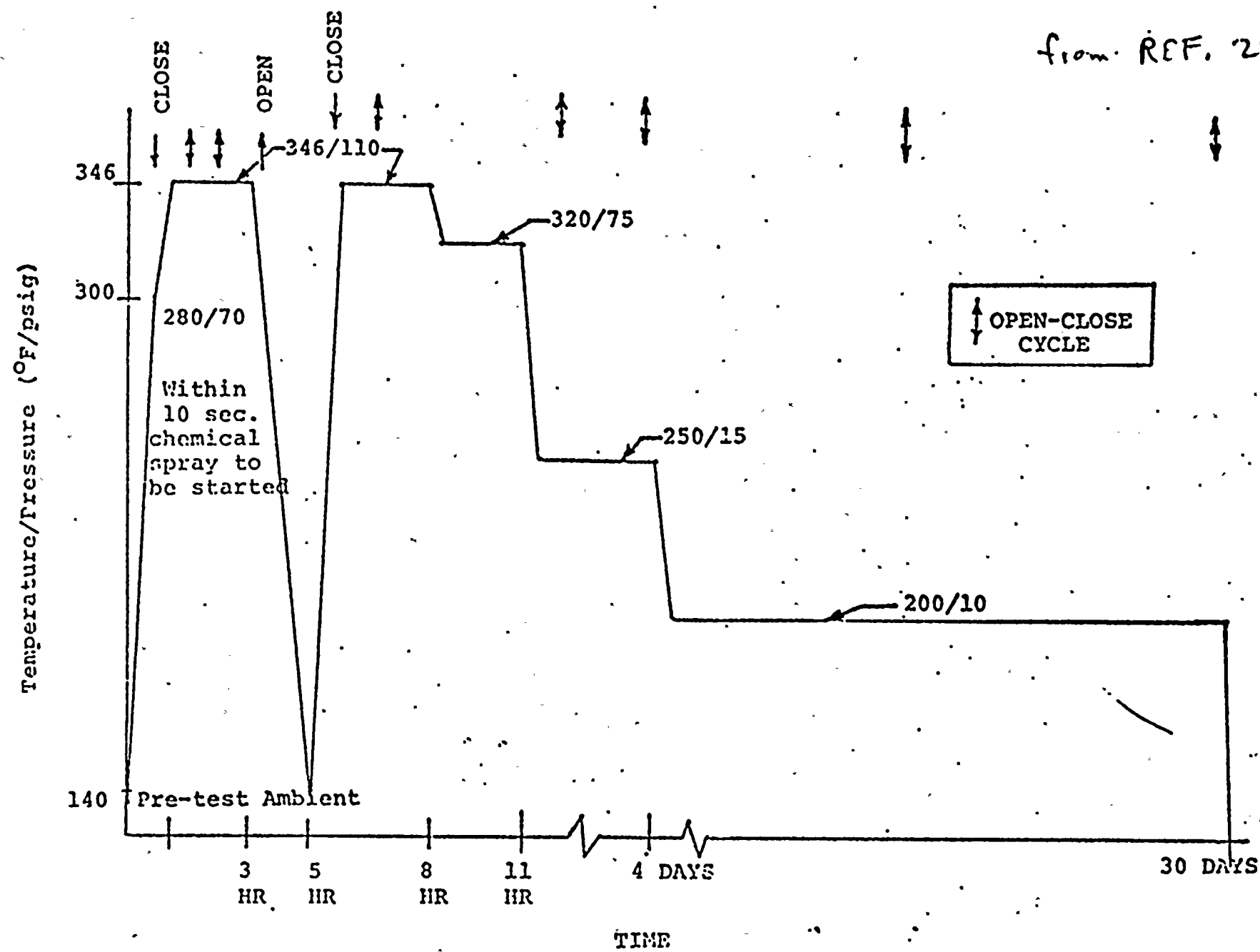
\*Documentation References: UNLESS OTHERWISE NOTED ALL REFERENCES ARE FORK SECTIONS.  
BY AUTOMATIC CONTROL COMPANY  
REPORT NOS 21678/TR.

Notes: FUNCTION OF THESE DEVICES IS NOT ASSUMED BY ADVERSE ENVIRONMENT ACCIDENT ANALYSIS. SEE GENERAL NOTE 4.

REF. 30 - WESTINGHOUSE ELECTRIC CORP.  
COMMUNICATIONS NS-TMA-1950.



from REF. 29



Temperature/Pressure Profile for simulation of loss-of coolant accident (LOCA) design basis event (DBE) by steam/chemical-spray environmental exposure. Page S11-2

LOCA SIMULATION BY ENVIRONMENTAL EXPOSURE (STEAM/CHEMICAL)





EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: <i>CONTAINMENT ISOLATION</i>	Operating Time						
PLANT ID NO: VCR-11 & 21	Temperature (°F)						
COMPONENT: DIAPHRAM FOR AIR OPERATOR	Pressure (PSIA)						
MANUFACTURER: G. KINNELL	Relative Humidity (%)						
MODEL NUMBER: 3250	Chemical Spray						
FUNCTION: ISOLATION	Radiation (10 <sup>6</sup> rads)						
ACCURACY: SPEC: FAIL CLOSED DEMON: FAIL CLOSED	Aging (years)						
SERVICE: ICE CONDENSER REFRIGERANT SUPPLY	Submergence						
LOCATION: INSIDE CONTAINMENT							
FLOOD LEVEL ELEV: 164'-0"							
ABOVE FLOOD LEVEL: YES							

\*Documentation References:

Notes: FAILURE MECHANISM OF DIAPHRAM, DUE TO ACTUATOR SPRING LOADING, WILL CAUSE VALVE TO POSITION TO PROPER POSITION. THEREFORE NO QUALIFICATION TO ACCIDENT CONDITIONS IS NECESSARY.

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: CONTAINMENT ISOLATION PLANT ID NO: VCR-1DI & 102 COMPONENT: DIAPHRAM FOR AIR OPERATOR MANUFACTURER: BAILEY MODEL NUMBER: 656 FUNCTION: ISOLATION ACCURACY: SPEC: FAIL CLOSED DEMON: FAIL CLOSED SERVICE: INSTRUMENT ROOM PURGE SUPPLY & EXHAUST RESPECTIVELY LOCATION: INSIDE CONTAINMENT FLOOD LEVEL ELEV: 614'-0" ABOVE FLOOD LEVEL: YES	Operating Time						
	Temperature (°F)						
	Pressure (PSIA)						
	Relative Humidity (%)						
	Chemical Spray						
	Radiation (10 <sup>6</sup> rads)						
	Aging (years)						
	Submergence						

\*Documentation References:

Notes:



EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: CONTAINMENT ISOLATION	Operating Time						
PLANT ID NO: VCR-103 & 105	Temperature (°F)						
COMPONENT: DIAPHRAM FOR AIR OPERATOR	Pressure (PSIA)						
MANUFACTURER: BAILEY	Relative Humidity (%)						
MODEL NUMBER: 722 & 732 RESPECTIVELY	Chemical Spray						
FUNCTION: ISOLATION	Radiation (10 <sup>6</sup> rads)						
ACCURACY: SPEC: FAIL CLOSED DEMON: FAIL CLOSED	Aging (years)						
SERVICE: CONTAINMENT PURGE SUPPLY	Submergence						
LOCATION: INSIDE CONTAINMENT							
FLOOD LEVEL ELEV: 614'-0"							
ABOVE FLOOD LEVEL: YES							

\*Documentation References:

Notes:



EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: CONTAINMENT ISOLATION	Operating Time						
PLANT ID NO: VCR-104&106	Temperature (°F)						
COMPONENT: DIAPHRAM FOR AIR OPERATOR	Pressure (PSIA)						
MANUFACTURER: BAILEY	Relative Humidity (%)						
MODEL NUMBER: 7157 & 7122 RESPECTIVELY	Chemical Spray						
FUNCTION: ISOLATION	Radiation (10 <sup>6</sup> rads)						
ACCURACY: SPEC:FAIL CLOSED DEMON:FAIL CLOSED	Aging (years)						
SERVICE: CONTAINMENT LARGE EXHAUST	Submergence						
LOCATION: INSIDE CONTAINMENT							
FLOOD LEVEL ELEV: 611'-04"							
ABOVE FLOOD LEVEL: YES							

\*Documentation References:

Notes:

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: CONTAINMENT ISOLATION PLANT ID NO: VCR-107 COMPONENT: DIAPHRAM FOR AIR OPERATOR MANUFACTURER: BAILEY MODEL NUMBER: 656 FUNCTION: ISOLATION ACCURACY: SPEC: FAIL CLOSED DEMON: FAIL CLOSED SERVICE: CONTAINMENT PRESSURE RELIEF EXHAUST LOCATION: INSIDE CONTAINMENT FLOOD LEVEL ELEV: 611'-0" ABOVE FLOOD LEVEL: YES	Operating Time						
	Temperature (°F)						
	Pressure (PSIA)						
	Relative Humidity (%)						
	Chemical Spray						
	Radiation (10 <sup>6</sup> rads)						
	Aging (years)						
	Submergence						

SEE VCR-10721

\*Documentation References:

Notes:

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.*		QUALIFICATION METHOD	OUTSTANDING ITEMS
	PARAMETER	SPEC.	QUAL.	SPEC.	QUAL.		
SYSTEM: VCF-11, 21, 101, 102, 103, 104, 105, 106 & 107	Operating Time	5 SEC.	≤ 10 SEC.	Q 022.11	TECH. SPEC. 2.4-1	TIME RESPONSE TESTING	NONE
PLANT ID NO: XSO-12, 21, 121, 122, 123, 124, 125, 126 & 127	Temperature (°F)	328.2	SEE TEST PROFILE	FIG. 022A-1 8-2	REF. 29	SEQUENTIAL	NONE
COMPONENT: SOLENOID VALVE	Pressure (PSIA)	35.5	SEE TEST PROFILE	N 13.8	11	11	11
MANUFACTURER: AUTOMATIC SWITCH COMPANY	Relative Humidity (%)	100	100	7.5	11	11	11
MODEL NUMBER: NP-231654V	Chemical Spray	1.14% FORT. ACID AND 0.15% NaOH	3600 PPM BORIC ACID WITH 1.004M Na <sub>2</sub> S <sub>2</sub> O <sub>5</sub>	N 5.3.6	11	11	11
FUNCTION: TRIP ISOLATION VALVE CLOSED	Radiation (10 <sup>6</sup> rads)	40	150	REF. 30	11	11	11
ACCURACY: SPEC: FUNCTIONAL. DEMON: 100% TYPICAL	Aging (years)		4		11	11	11
SERVICE: CONTINUOUSLY VENTILATION & TCE CONDENSER REJECT RELEASIS ISOLATION	Submergence	NA	NA	NA	A.E.T. DRWG.	ENGINEERING DRAWING REVIEW	11
LOCATION: INSIDE COMPARTMENT							
FLOOD LEVEL ELEV: 11: 614'-0"							
ABOVE FLOOD LEVEL: YES							

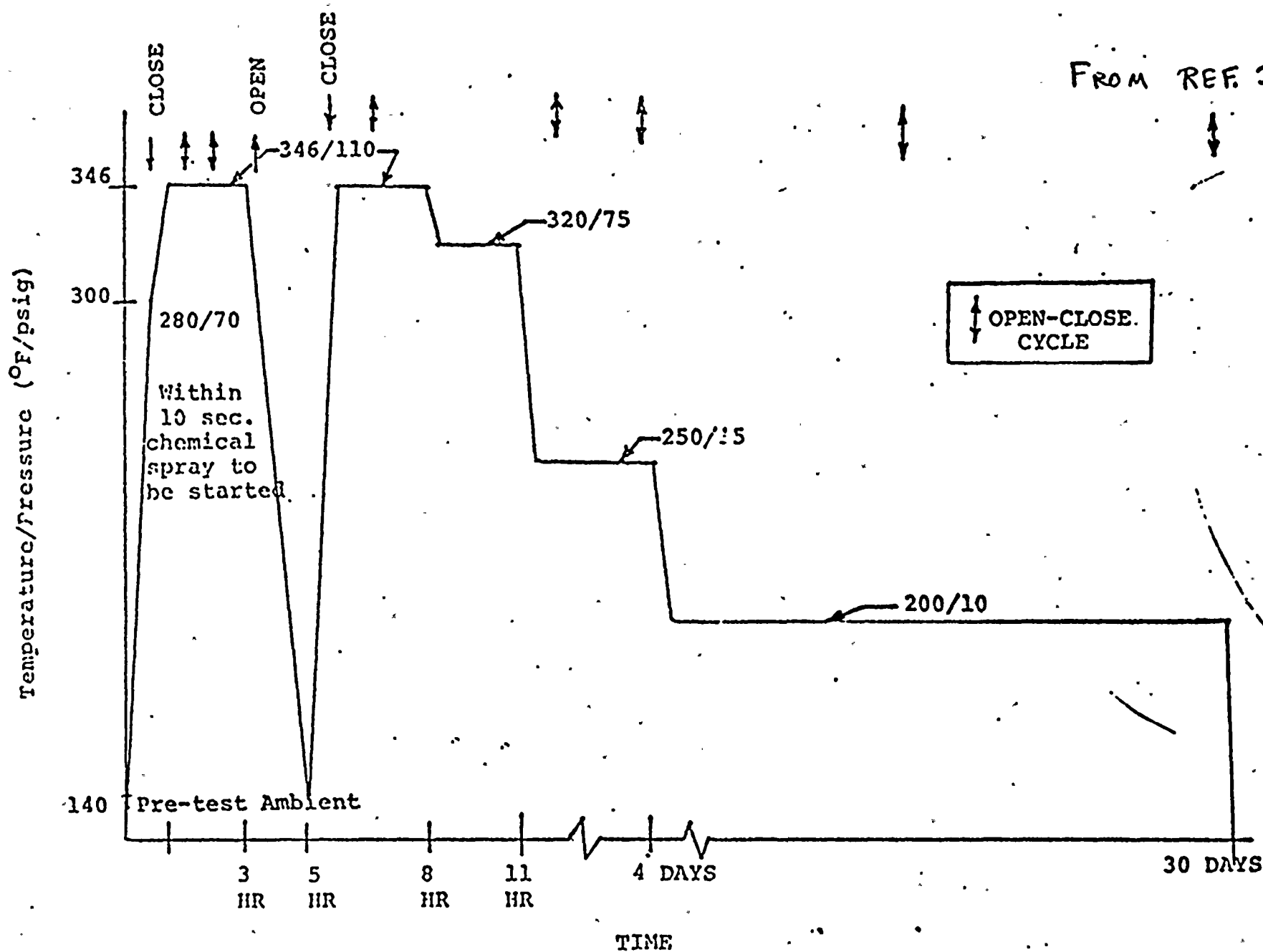
\*Documentation References: UNLESS OTHERWISE NOTED REFERENCES ARE FSAR SECTIONS.

Notes:

REF 024: AUTOMATIC SWITCH COMPANY  
REPORT AQS 21678/TR.

REF 30: WESTINGHOUSE ELECTRIC CORP.  
COMMUNICATION NS-TMA-1950.





Temperature/Pressure Profile for simulation of loss-of coolant accident (LOCA) design basis event (DBE) by steam/chemical-spray environmental exposure.

Attachment 2  
To  
AEP:NRC:00356B

Replacement pages for Attachment 5  
and 6 to AEP:NRC:00356A



TEST No. 73C21

Test type: Sequential

RADIATION: 100 MRADS

Profile:

290°, 45psig, 12 hr

220°, 5psig, 7 DAYS

Chem Spray: 1800 ppm B

To be inserted in place of pg. CI1-2 OF  
ATTACHMENT 5 TO AEP: NRC:00356A

Page: CI1-2

44.

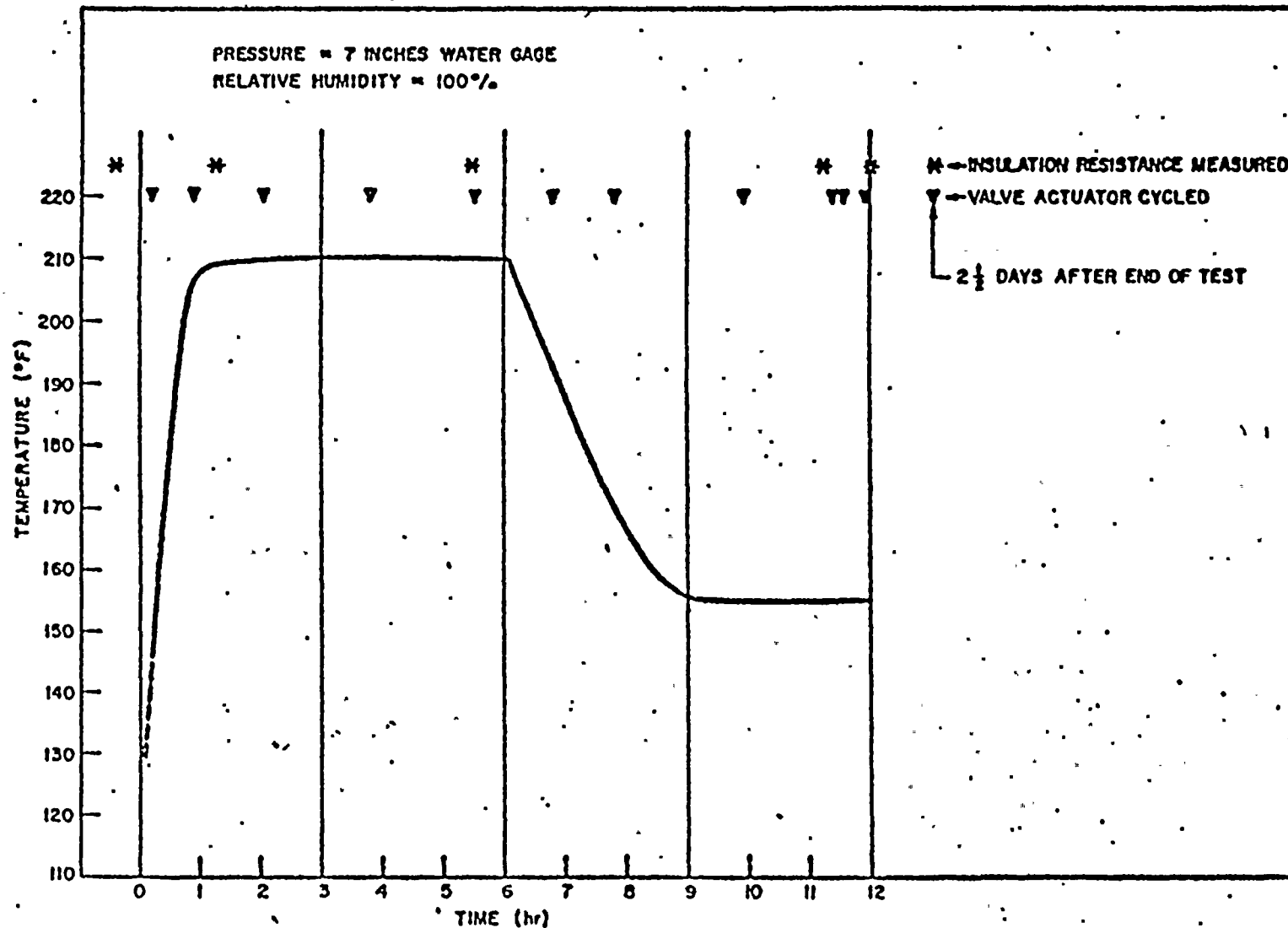


Figure 3. Test Profile

3-6

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Page: TC 9-2

To be inserted in place of pg TC 9-2 of Attachment 5 to AEP: NAC: 00356A

44.

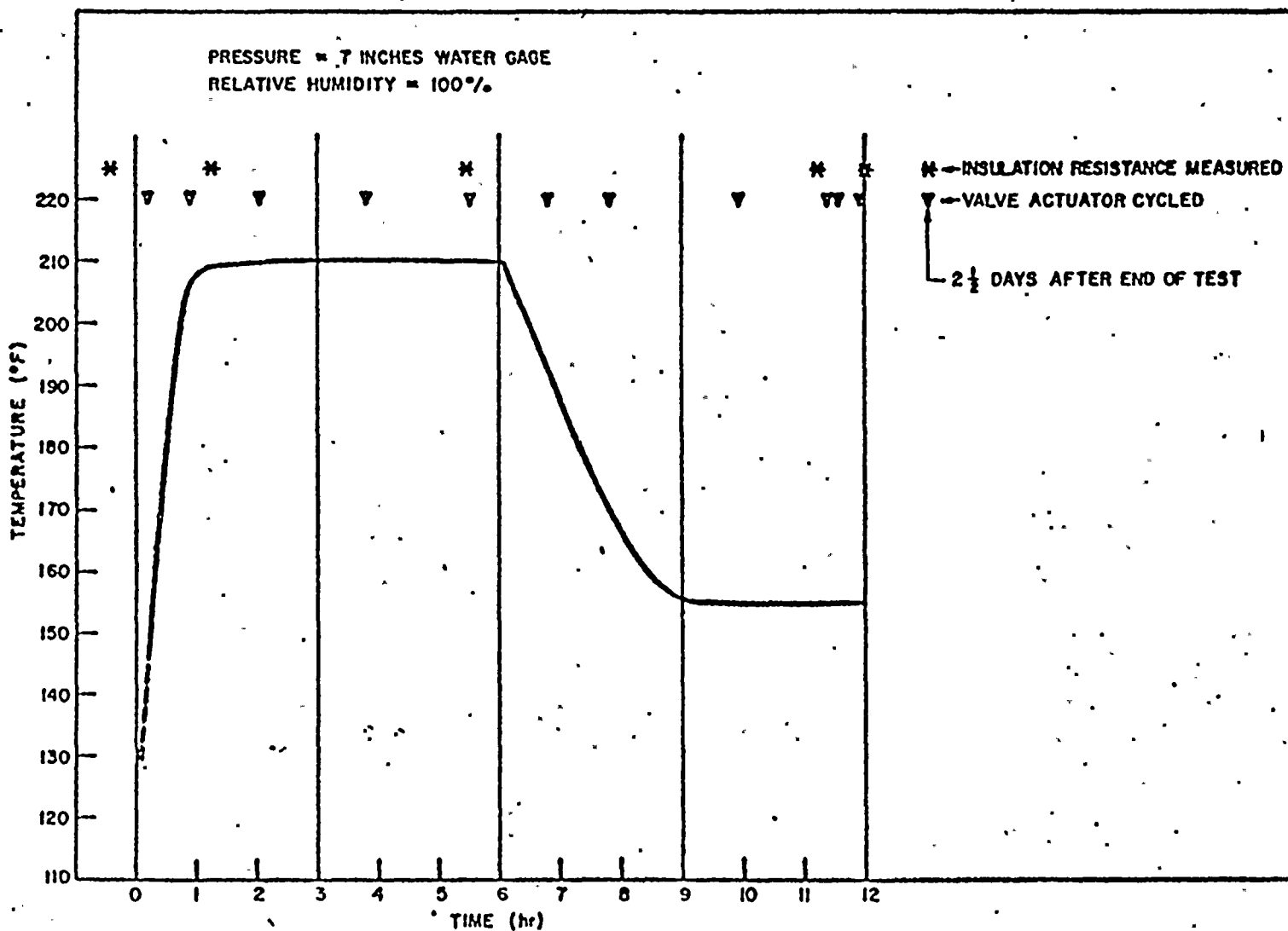


Figure 3. Test Profile

31. BOSTON INSULATED CORE CO.

Item # 1064

TEST No. 73C212

Test type: Sequential

RADIATION: 100 MRADS

Profile:

290°, 45psig, 12 hr

220°, 5psig, 7 DAYS

Chem Spray: 1800 ppm B

To be inserted in place of pg. CI 1-2 of Attachment 5 to

AEP: NRC: 00356A

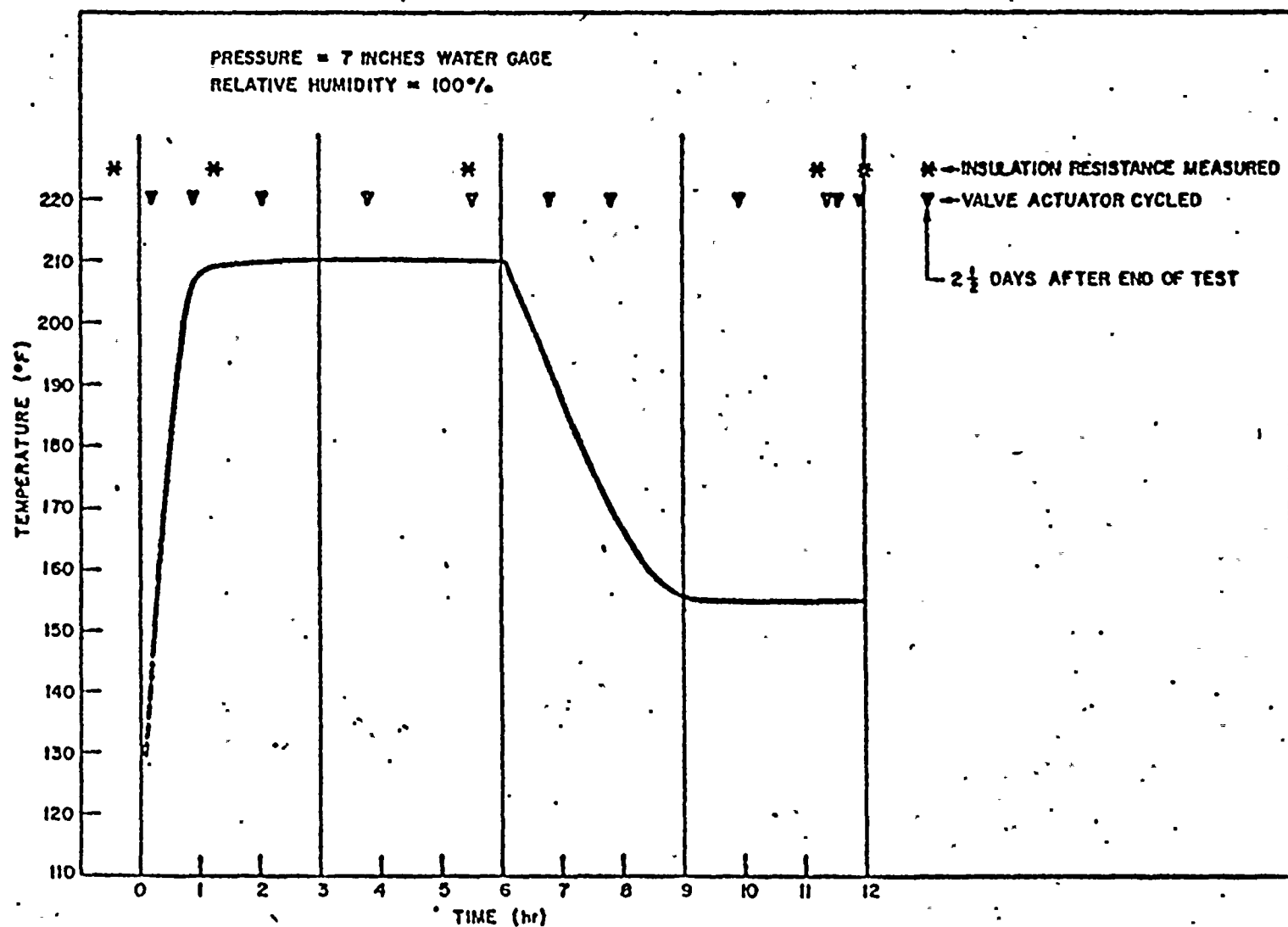


Figure 3. Test Profile



44.

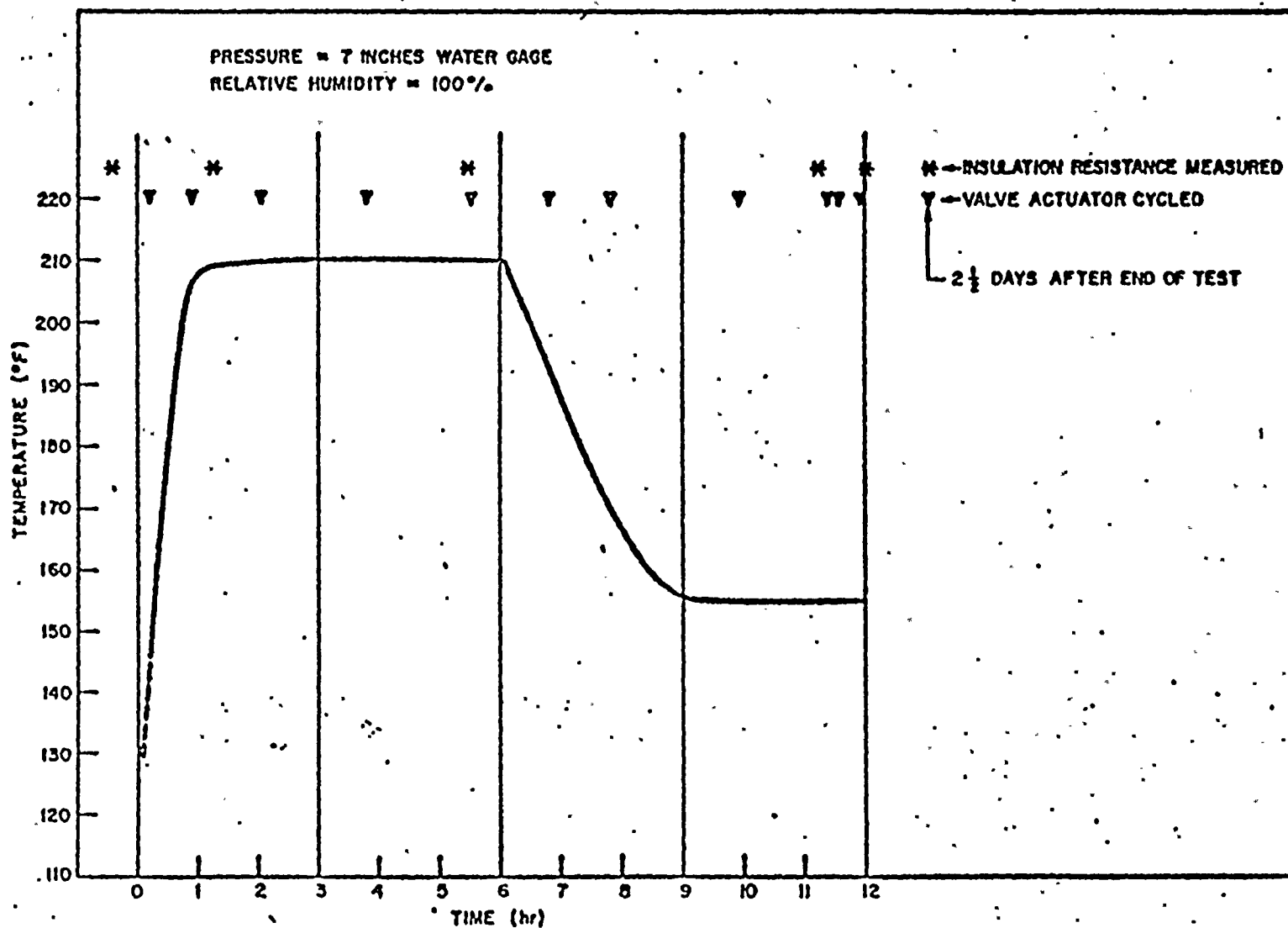


Figure 3. Test Profile

