



Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

November 1, 1991

Dr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Attn: Document Control Desk

Subject: Dresden Nuclear Power Station Units 2 and 3
Service Test Load Profile for 250 Volt Batteries
NRC Docket Nos. 50-237 and 50-249

Reference: CECo-NRR-Region III Meeting on 250 Volt Batteries on
October 28, 1991 (held at Dresden Station)

Dear Dr. Murley:

The referenced meeting was held with NRR and Region III Staff to discuss the results of recent Service Testing on the Dresden Unit 3 250 volt battery, the actions taken as a result of that testing, and the load profile developed for future Service Testing on the 250 volt batteries (Units 2 and 3) at Dresden Station. During that meeting Commonwealth Edison Company (CECo) was requested to submit the load profile, and associated commitments discussed during the meeting, for Staff review and approval. This letter presents that information.

Attachment 'A' presents the commitments made by CECo during the referenced meeting. The commitments entail: 1) procedure revisions and circuitry modifications which address the sequencing/distribution of certain loads on the 250 volt batteries (for the purposes of load profile development); 2) the necessary short-term battery testing in order to declare the 250 volt batteries operable; 3) modifications which will increase the current capacity of the 250 volt batteries; and 4) a Technical Specification amendment to reflect the surveillance testing to be performed on the 250 volt batteries.

For the development of the limiting case load profile, twenty-two (22) postulated load scenarios were evaluated. These scenarios took into account the following: 1) large line break events; 2) intermediate line break events; 3) small line break events; and 4) main steam line break events. Attachment 'B' presents the limiting case load profile to be utilized for future Service Testing on the 250 volt batteries at Dresden Station. The profile was developed from a scenario which assumed: 1) both units initially at power; 2) a loss of off-site power for both units coupled with a large break LOCA on one unit; and 3) a failure of the Unit 2/3 diesel generator.

9111080164 911101
PDR ADCK 05000237
PDR

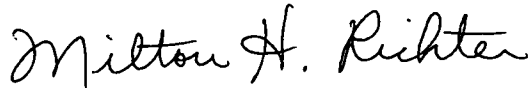
ADCK 11/1

CECo requests verbal approval of the load profile presented in Attachment 'B' to support Service Testing on the Unit 3 250 volt battery which is scheduled for November 1, 1991. As discussed in the referenced meeting, successful completion of this testing will allow the 250 volt batteries at the station to be declared operable. CECo appreciates the efforts of your Staff on this matter.

As discussed in the referenced meeting, CECo is also currently evaluating the 250 volt battery load profile for Quad Cities Station. It is expected that this evaluation will be completed by November 15, 1991. At that time, CECo will notify your staff on the results of that evaluation and any necessary actions.

Please contact this office should further information be required.

Respectfully,



Milton H. Richter
Nuclear Licensing Administrator

Attachments: A - Commitments From CECo/NRC Meeting
B - Service Test Load Profile for 250 Volt Batteries

cc: A. Bert Davis, Regional Administrator - RIII
B.L. Siegel, Project Manager - NRR
W.G. Rogers, Senior Resident Inspector - Dresden
F. Rosa, NRR Electrical Systems Branch Chief
P.J. Kang, NRR Electrical Systems Branch
G. Thomas, NRR Reactor Systems Branch
R.N. Gardner, RIII
R.A. Westberg, RIII
D.S. Butler, RIII

ATTACHMENT A
COMMITMENTS FROM CECo/NRC MEETING

ON OCTOBER 28, 1991

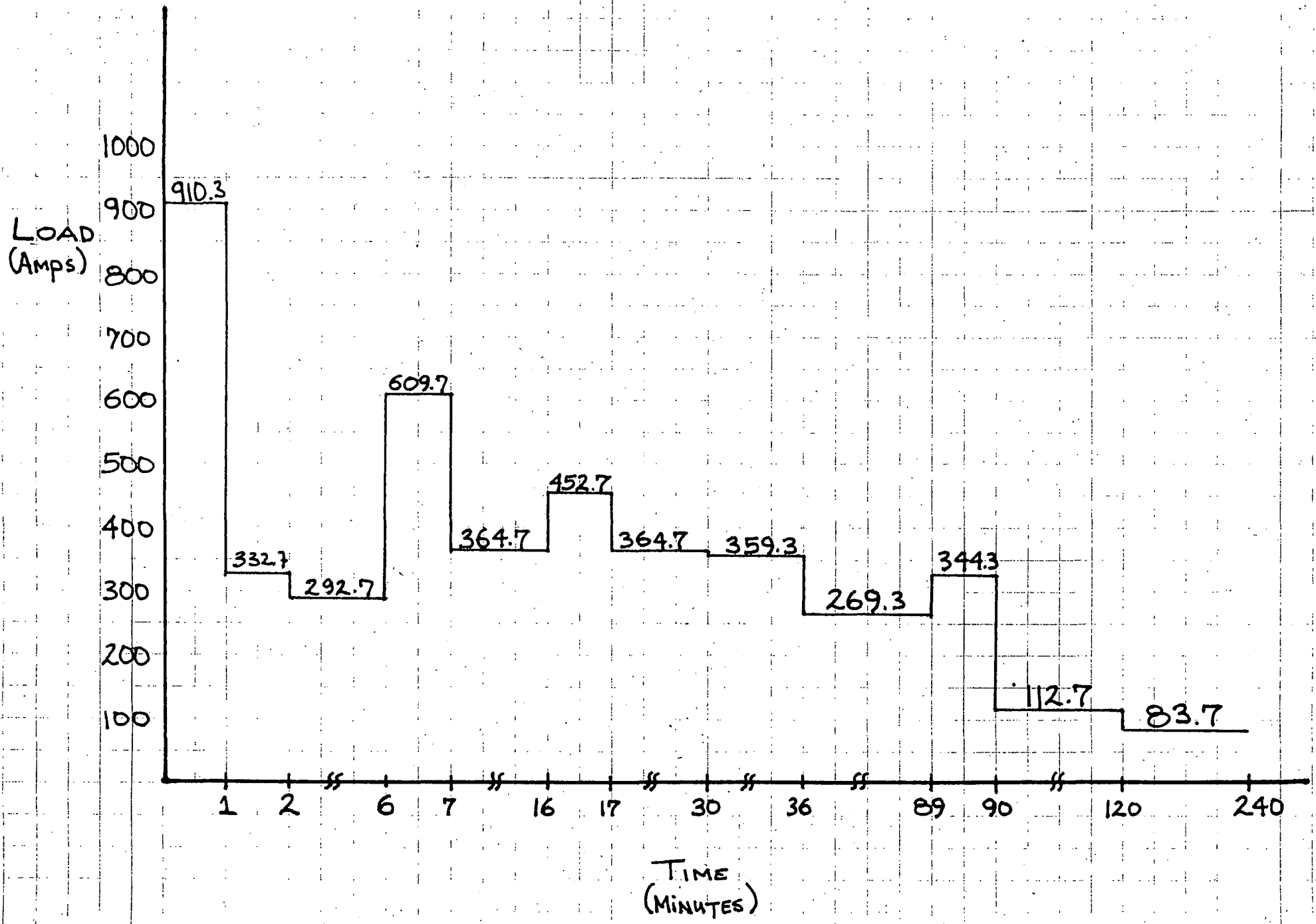
- Procedure revisions will be implemented to eliminate the manual start of the turbine Emergency Bearing Oil Pump (EBOP) following a turbine trip. The appropriate procedure revisions will be completed prior to the startup of Unit 2 from the current forced outage, and prior to the startup of Unit 3 from the current refueling outage.
- An auxiliary relay will be installed in the circuitry for the High Pressure Coolant Injection (HPCI) System Full Flow Test Valve (2301-10) for Units 2 and 3 in order to ensure non-coincident motor initiation with the HPCI Injection Valve (2301-8). The Unit 2 modification will be completed prior to the startup of the unit from the current forced outage. The Unit 3 modification will be completed prior to the startup of the unit from the current refueling outage.
- The starting circuitry for the turbine EBOP for Units 2 and 3 will be modified in order to inhibit the automatic EBOP pump start when the turbine is on turning gear. The evaluation for potential modifications is currently in its preliminary phase. The Unit 3 modification is scheduled to be installed prior to the startup of the unit from the current refueling outage. For Unit 2, the modification will be completed prior to the conclusion of the next refueling outage (Fall 1992). CECo will notify the NRC of any schedule changes, or alternative approaches, on this modification.
- A Service Test will be performed on the Unit 3 250 volt battery (current 116 cell configuration) utilizing the load profile presented in Attachment 'B' of this submittal. Successful completion of this testing will allow the 250 volt batteries to be declared operable in order to support Unit 2 startup from the current forced outage. The initial Service Test on the Unit 2 250 volt battery will be performed during the next Unit 2 refueling outage (Fall 1992).
- To increase the capacity of the 250 volt batteries, four (4) cells will be added to each battery. The additional cells will be installed for the Unit 3 battery prior to the startup of the current refueling outage. Following installation of the cells, an abbreviated Service Test (approximately 2 minutes in length) will be performed utilizing the appropriate section of the load profile presented in Attachment 'B' of this submittal. For the Unit 2 battery, the installation of the additional cells will be completed prior to the conclusion of the next refueling outage (Fall 1992). It should also be noted that the battery modifications will evaluate the impact of the additional cells on the system components (e.g., short circuit contributions, charging voltages, etc.).
- Technical Specification Surveillance Requirement 4.9.A.3 for each unit will be revised to reflect the Service and Performance Testing which will be conducted on the 250 volt batteries on a refueling outage frequency. It is expected that the amendment request for this revision will be submitted during the first quarter of 1992.

ATTACHMENT B
SERVICE TEST LOAD PROFILE FOR
250 VOLT BATTERIES

PROFILE ASSUMPTIONS

- BOTH UNITS INITIALLY AT POWER
- LOSS OF OFFSITE POWER - BOTH UNITS
- LARGE BREAK LOCA ON ONE UNIT
- ACHIEVE AND MAINTAIN HOT SHUTDOWN ON THE OTHER UNIT
- UNIT 2/3 DIESEL GENERATOR FAILURE
- NO BATTERY CHARGER RESTORATION
- NO MANUAL START OF EBOP
- HPCI IN TEST AT START OF EVENT (2301-8 AND 2301-10 NON-COINCIDENT)
- RANDOM COINCIDENCE OF LOADS INCORPORATED

Period#	Amps	Duration (minutes)
1	910.3	1
2	332.7	1
3	292.7	4
4	609.7	1
5	364.7	9
6	452.7	1
7	364.7	13
8	359.3	6
9	269.3	53
10	344.3	1
11	112.7	30
12	83.7	120



LOAD NAMES

EQUIP. NO.	
2301-3	HPCI STEAM STOP VALVE
2301-5	HPCI STEAM LINE VALVE - CIV
2301-6	HPCI SUCTION FROM CST
2301-8	HPCI INJECTION
2301-9	HPCI PUMP DISCHARGE
2301-10	FULL FLOW TEST VALVE
2301-14	MIN FLOW
2301-15	TEST RETURN TO CST
2301-35	HPCI SUCTION SUPPRESSION POOL
2301-36	HPCI SUCTION SUPPRESSION POOL
2301-48	GLAND SEAL COND. RETURN TO HPCI SUCTION
2301-49	GLAND SEAL COND. RETURN TO CST
AOP	AUXILIARY OIL PUMP
hpci EBOP	HPCI EMERGENCY BEARING OIL PUMP
hpci TG	HPCI TURNING GEAR
hpci drn	HPCI GLAND SEAL COND. DRAIN PUMP
1001-2A,B,C	OUTBOARD SHUTDOWN COOLING CONT. ISO VALVE - SUCTION
1001-4A,B,C	OUTBOARD SHUTDOWN COOLING CONT. ISO VALVE - DISCHARGE
220-2	MAIN STEAM LINE DRAIN - OUTBOARD CONTAINMENT ISOLATION
4102	ISCO MAKE UP VALVE - FIRE WATER OR SERVICE WATER
1301-2	ISCO STEAM SUPPLY - OUTBOARD ISOLATION
1301-3	ISCO CONDENSATE RETURN - OUTBOARD ISOLATION
1301-10	ISCO MAKE UP VALVE - CONTAMINATED DEMIN WATER
1201-2	CLEANUP DEMINERALIZER (RWCU) OUTBOARD ISOLATION VALVE
1201-3	CLEANUP DEMINERALIZER (RWCU) OUTBOARD ISOLATION VALVE
TB EBOP	TURBINE EMERGENCY BEARING OIL PUMP
TB ESOP	EMERGENCY SEAL OIL PUMP (GENERATOR SEAL OIL)
LOP 3A	MG SET LUB OIL PUMP 3A
LOP 3B	MG SET LUB OIL PUMP 3B
UPS	UNINTERRUPTABLE POWER SUPPLY
3A-3903	SERVICE WATER VALVE
3B-3903	SERVICE WATER VALVE
3-3904	SERVICE WATER VALVE
3-3905	SERVICE WATER VALVE
CONT	CONTROL POWER NEEDS

TABLE VIII-2
LARGE BREAK LOCA

HPCI IN TEST MODE 2301-8, 10, NON COINCIDENT STARTING

Equip No.	LRC	FLC	0 Sec.	1 Sec.	25 Sec.	6 Min.	16 Min.			
2301-3	112.0	16.5								
2301-5	112.0	16.5			112.0					
2301-6	44.0	8.0								
2301-8	354.0	38.0	354.0	38.0						
2301-9	440.0	38.0								
2301-10	368.0	40.0		368.0	40.0					
2301-14	85.4	11.0		85.4	11.0					
2301-15	97.0	17.0	97.0	17.0	17.0					
2301-35	44.0	8.0								
2301-36	44.0	8.0								
2301-48	9.0	1.8								
2301-49	18.0	3.8								
AOP	472.0	150.0	150.0	150.0	150.0	150.0	150.0			
HPCI EOP	95.0	27.0								
HPCI EXH	3.0	1.9	1.9	1.9	1.9	1.9	1.9			
HPCI TG	10.0	6.6			10.0	6.6	6.6			
HPCI DRN	18.0	12.5	18.0	18.0	18.0	18.0				
1001-2A	440.0	38.0								
1001-2B	440.0	38.0								
1001-2C	440.0	38.0								
1001-4A	405.0	53.0								
1001-4B	405.0	53.0								
1001-4C	405.0	53.0								
220-2	9.0	1.8								
4102	10.4	2.11								
1301-2	174.0	22.0								
1301-3	174.0	22.0								
1301-10	10.4	2.1								
1201-2	95.0	16.5	95.0	95.0	16.5					
1201-3	95.0	16.5								
HTR 2A										
HTR 2B										
TB EBOP	335.0	90.0				335.0	90.0			
TB ESOP	45.0	29.0	45.0	45.0	29.0	29.0	29.0			
LOP 3A	5.0	2.7	5.0	5.0	2.7	2.7	2.7			
LOP 3B	5.0	2.7	5.0	5.0	2.7	2.7	2.7			
UPS	0	60.0	60.0	60.0	60.0	60.0	60.0			
3A-3903	26.0	4.2				26.0	26.0			
3B-3903	26.0	4.2				26.0	26.0			
3-3904	18.0	2.4				18.0	18.0			
3-3905	5.0	1.0				5.0	5.0			
CONT, PWR			22.0	22.0	22.0	22.0	22.0			
TOTAL			852.9	910.3	492.8	702.9	439.9			

NOTE: The differences between the load profile and this table is the placement of random loads in the most critical sizing period per IEEE Standard 485.

LARGE BREAK LOCA HPCI IN TEST; MODIFIED (910A) PROFILE

Large Break LOCA;HPCI in Test; modified						Time in seconds							
Equip No.	Start Time	Duration	Stop Time	LRC	FLC	1	2	3	4	5	6	7	8
2301-3													
2301-5	0.25	0.25	0.50	112	16.5								
2301-6													
2301-8	0.00	0.21	0.21	354	38	354	38	38	38	38	38	38	38
2301-9													
2301-10	0.01	1.40	1.41	368	40		368	40	40	40	40	40	40
2301-14	0.01	0.27	0.28	85.4	11		85.4	11	11	11	11	11	11
2301-15	0.00	1.00	1.00	97	17	97	17	17	17	17	17	17	17
2301-35													
2301-36													
2301-48													
2301-49													
AOP	0.00	90.00	90.00	472	150	150	150	150	150	150	150	150	150
hpci EBOP													
hpci EXH	0.00	240.00	240.00	3	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
hpci TG	0.25	240.00	240.00	10	6.6								
hpci drn	0.00	90.00	90.01	18	18	18	18	18	18	18	18	18	18
1001-2A													
1001-2B													
1001-2C													
1001-4A													
1001-4B													
1001-4C													
220-2													
4102													
1301-2													
1301-3													
1301-10													
1201-2	0.00	0.00	0.00	95	0	95							
1201-2	0.01	0.30	0.31	95	16.5		95	16.5	16.5	16.5	16.5	16.5	16.5
1201-3													
TB EBOP	6.00	30.00	36.00	335	90								
TB ESOP	0.00	0.00	0.00	45	0	45							
TB ESOP	0.01	120.00	120.01	45	29		45	29	29	29	29	29	29
LOP 3A	0.00	0.00	0.00	5	0	5							
LOP 3A	0.01	30.00	30.01	5	2.7		5	2.7	2.7	2.7	2.7	2.7	2.7
LOP 3B	0.00	0.00	0.00	5	0	5							
LOP 3B	0.01	30.00	30.01	5	2.7		5	2.7	2.7	2.7	2.7	2.7	2.7
UPS	0.00	240.00	240.00	60	60	60	60	60	60	60	60	60	60
3A-3903	6.00	0.50	6.50	26	4.2								
3A-3903	16.00	0.50	16.50	26	4.2								
3B-3903	6.00	0.50	6.50	26	4.2								
3B-3903	16.00	0.50	16.50	26	4.2								
3-3904	6.00	0.40	6.40	18	2.4								
3-3904	16.00	0.40	16.40	18	2.4								
3-3905	6.00	0.40	6.40	5	1								
3-3905	16.00	0.40	16.40	5	1								
Control					21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787
Total						852.69	910.09	408.59	408.59	408.59	408.59	408.59	408.59

LARGE BREAK LOCA HPCI IN TEST; MODIFIED (910A) PROFILE

9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
38	38	38	38	38	38	38	38	38	38	38	38	38	38	
40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5
29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787
408.59	408.59	408.59	408.59	408.59	408.59	408.59	408.59	408.59	408.59	408.59	408.59	408.59	370.59	370.59

LARGE BREAK LOCA HPCI IN TEST; MODIFIED (910A) PROFILE

24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
		112	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5
40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
11	11	11	11	11										
17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
		10	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5							
29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787
370.59	370.59	492.59	393.69	393.69	382.69	382.69	382.69	366.19	366.19	366.19	366.19	366.19	366.19	366.19

LARGE BREAK LOCA HPCI IN TEST; MODIFIED (910A) PROFILE

39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5			
40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787	21.787
366.19	366.19	366.19	366.19	366.19	366.19	366.19	366.19	366.19	366.19	366.19	366.19	366.19	349.69	349.69

