INFORMATION COPY

TDI-Emergency Diesel Generators
3300 KW Qualified Load Lesson Plan

LR-85-01 Rev. 3

Prepared by Ken Kottkamp 2/27/85
Date

Approved by [illegible] 2/27/85
Date

1.0 LESSON PLAN: TDI-EDG 3300 KW Qualified Load.

2.0 LECTURE DURATION:

3.0 MATERIALS REQUIRED FOR STUDENT

3.1 SP 29.015.01 Rev. 9, Loss of Offsite Power

3.2 SP 29.010.01 Rev. 4, Emergency Shutdown

3.3 SP 29.023.01 Rev. 5, Level Control

3.4 SP 29.023.03 Rev. 9, Containment Control

3.5 SP 29.023.04 Rev. 2, Level Restoration

3.6 SP 29.023.05 Rev. 3, Rapid Depressurization

3.7 SP 29.024.01 Rev. 3, Transient with Failure to Scram

3.8 SP 23.702.04 Rev. 4, Suppression Pool Leakage Return

4.0 MATERIALS REQUIRED FOR INSTRUCTOR

4.1 Enough copies of TDI-EDG 3300KW Qualified Load Problem Sets to be handed out to students

4.2 Transparencies contained in Section 9.0 of this Lesson Plan

4.3 Enough copies of 4KV and 480V KW load tables to be handed out to students.

5.0 REFERENCE MATERIALS

5.1 Copy of LILCO prefiled testimony concerning the 3300KW qualified load, crankshafts and engine blocks dated 1/15/85

5.2 Copy of Breaker Lineup Checklist for panels X40-PNL-AC1, X40-PNL-AC2 and T51-PNL-AC2 contained in SP 23.317.01, Rev. 7, Appendix 12.2.

6.0 SCOPE:

Based on the typical requalification lecture class size (6) and the high level of each individuals plant specific knowledge, the information concerning the 3300KW qualified load will be presented using a discussional type presentation supplemented with problem sets.

The presentation will include the SNPS response to the following conditions:

Loss of Offsite Power (LOOP)
Loss of Offsite Power in conjunction with a Loss of Coolant Accident (LOOP/LOCA)
Loss of Offsite Power in conjunction with a Failure to Scram (LOOP/ATWAS)

Correct operator response to each of the above conditions will be discussed with particular attention being paid to ensure operator response results in load on each EDG being maintained at less than 3300KW. Situations in which single EDG's fail to start will also be discussed, as will multiple failure type situations that cause individual EDG loads to exceed 3300KW.

7.0 STUDENT OBJECTIVES

7.1 Given a loss of offsite power conditions, with no LOCA signal present, list the 4KV and 480KV motor loads (not MOV's) that will auto start/trip for any of the following situations:

a) All 3 EDG's start and restore power to their respective emergency buses.

b) 2 of 3 EDG's start and restore power to their respective emergency buses.

7.2 Given a loss of offsite power condition in conjunction with a LOCA signal list the 4KV and 480V motor loads (not MOV's) that will auto start/trip for any of the following situations:

a) All 3 EDG's start and restore power to their respective emergency buses.

b) 2 of 3 EDG's start and restore power to their respective emergency buses.

7.3 Given a status of running 4KV & 480V motor loads, identify loads that have failed to auto start/trip for either of the following conditions:

a) Loss of offsite power with no LOCA signal present

b) Loss of offsite power with a LOCA signal present

7.4 State the TDI-EDG load limits for the following conditions:

a) Surveillance test purposes

b) In support of accident and/or emergency conditions.

SRO ONLY

7.5 Given a status of running 4KV & 480V motor loads and initial values of EDG loads, use the SP 29.015.01, Rev. 9 to list in sequence the loads that you would start/stop in order to perform all actions required from the Symptomatic Emergency Procedures and maintain the load on each EDG < 3300KW.

7.6 Given a EDG load in excess of 3300 KW and a status of running 4KV and 480V motor loads and a status of the following RPV and containment parameters:

RPV level
RPV pressure
DW pressure
DW temperature
SP level
SP temperature

identify the equipment that you would shutdown in order to reduce EDG load to less than 3300KW while maintaining adequate core and containment cooling.

8.0 LESSON

Loss of Offsite Power

Transparency #1

- Use Transparency 1 to review status of plant prior to LOOP.
- Assure students that RCIC problem has just occurred and Rx shutdown is soon to be started.

Hand out Sheet #2 of TDI-EDG Problem Set.
Tell students to assume no operator action has occurred.

- Have students fill in table on Sheet 2 with the status of components after the LOOP event.

Give students enought time so that each completes his table.

If asked, supply the following info:
Rx Power = 0% on APRM's
Rx Level = -20 and decreasing
DW Pressure = 15.2 PSIA.

Transparency #2

- Use Transparency #2 to lead discussion of Post LOOP Plant Status (Uncover 1 system at a time rather than present entire transparency at once).

Transparency #2A

- Have students review emergency procedures and complete a list of actions that must be taken for this situation.

Compare list of actions compiled by class to these

- Verify Rx scram and perform 29.010.01
- Verify auto actions of 29.015.01 have occurred.

Handout sheets 3 & 4 of TDI-EDG Problem Set and have the students complete them.

- Verify group isolations consistent with entry conditions.
- Verify auto initiation of ECCS consistent with entry conditions (none).
- Restore and maintain RPV level between +12.5" and 54.5".

Review effect on EDG loads due to various combination of running pumps

- Operate available S.P. cooling.
- Lineup for injection and start pumps in at least 2 of the following normal injection subsystems.

  CSA
  CSB
  LPCI A
  LPCI B
- Open all ADS valves and proceed to Rapid Depressurization.

Point out that for a LOOP event the Main Turbine & Rx Feed Pump Turbine AC auxiliary loads should auto start.

- Restore and maintain RPV level between +12.5" and + 54.5".

Use Transparency 2A to show approximate load expected on EDG's after a LOOP. Point out variation that could exist due to:

- Rx Bldg Exhaust Fan Alignment
- CRD Pump Alignment
- RBSVS/CRAC Chiller Response

Transparency #3

LOOP/LOCA

- Use Transparency 3 to review status of plant prior to LOOP/LOCA.
- Point out to students that B RBSW pump is disassembled for maintenance.
- Point out to students that RCIC failure was recent and plans are in progress to start power reduction for a plant shutdown.

Hand out sheet #5 of TDI-EDG Problem Set.

- Have students fill in Sheet 5 with the status of components after the LOOP/LOCA EVENT.

Give students enough time so that each completes his sheet.

If asked supply the following info.

Rx Power = 0% on APRM's
Rx Level < TAF but increasing
DW Pressure = 30 PSIA

Transparency #4

Transparency #4A

Point out that RBSVS/CRAC Chillers 3B & 4B have not started since no service water flow exists in B loop.

- Use Transparency #4 to lead discussion of POST LOOP/LOCA PLANT STATUS. (uncover 1 system at a time rather than present entire transparency at once).
- Use Transparency #4A to show approximate load expected on EDG's after a LOOP/LOCA. Point out variations that could exist due to:
  - RX Bldg Exhaust Fan Alignment
  - RBSVS/CRAC Chiller Alignment

Give Students a few moments to conceptualize status of whole plant then ask.

- Assume emergency shutdown immediate actions are then completed.

  Are any other operator actions warranted at this time?

Structure next portion of discussion based on response to question.

If Response is NO

- Ask what expected status of plant would be in 5 minutes.
- If students do not identify fact heat loads are all from B components (EDG 102 loads) & RBSW is only available to loop A then supply additional info., i.e.:
  - Low Rx Bldg P
  - High RBCLCW Temp.

  Ensure students realize that the present plant status provides no secondary containment pressure control.

If Response is YES
Direct students suggestions to SRO members of class for their evaluation/concurrence.

- Once students identify the lack of cooling to LOOP B components, ask them how they will correct the problem.

Hand out sheets 6 & 7 of TDI-EDG Problem set and have the students complete them.

Point out to students that the running RBSW pump status prior the LOOP/LOCA event was not in compliance with the RBSW operating procedure.

ENSURE STUDENTS REALIZE THAT STARTING D RBSW PUMP PRIOR TO SHIFTING LOADS FROM BUS 103 COULD CAUSE EDG 103 LOAD TO EXCEED 3300 KW.

LOOP/ATWAS

Transparency #5

. Use Transparency 5 to review status of plant prior to LOOP/ATWAS.

Handout sheet 8 of TDI-EDG problem set.

. Have students fill in sheet 8 with the status of components after the LOOP/LOCA event.

Transparency #6

. Use Transparency #6 to lead discussion of Post LOOP/ATWAS Plant Status. (Uncover 1 system at a time rather than present entire transparency).

Transparency 6A

. Use Transparency 6A to show approximate load expected on EDG's after a LOOP/ATWAS. Point out variations that could exist due to:

  . RBSVS/CRAC Chiller Alignment
  . Rx Bldg Exhaust Fan Alignment
  . RBCLCW Pump Alignment

If asked, supply the following info:
Rx Power 2%
Rx Level -45" and increasing
DW Pressure 0.2 PSIG and increasing

. Have students review SP 29.024.01, 29.023.01 & 29.023.03 and compile a list of actions that must be taken for this situation.

Compare list of actions compiled by class to these

. Attempt to verify Rx scram

. Identify failure to scram and initiate 29.024.01

Hand out sheet 9 of the TDI-EDG Problem Set and have the students complete it.

. Manually scram Reactor

  a) Manual scram pushbuttons
  b) Mode switch to shutdown

. Trip Rx Recirc Pumps (N/A)

. Commence Suppression Pool Cooling

. Attempt to manually insert control rods (N/A)

. Vent air from scram air system

. Attempt to individually scram control rods

. Start either A or B SBLC Pump

. Terminate all injection into the RPV with the exception of CRD and RCIC or HPCI to maintain RPV level above TAF

REDUCE EDG LOAD TO LESS THAN 3300KW

SITUATION 1

LOOP/LOCA CONDITION WITH EDG 101 LOAD > 3300KW

Transparency 7 & 7A

° Use Transparency 7 & 7A to show Plant Status after a LOOP/LOCA event.

Wait until at least one student identifies 101 EDG load > 3300KW

Handout sheet 10 of problem set
INSTRUCTOR SUPPLIED INFO:

° Have students PRIORITIZE running loads as shown on Transparency 7 using Instructor supplied info.

RPV LEVEL - 20" and Steady
RPV Pressure 100 PSIG
DW Pressure 15 PSIG
SP Temp 140°F
SP Level +2" indicated
DW Temp 205°F

Wait until students have completed sheet 10 of the problem set and then ask the crew to decide what load they would shutdown.

° Students should select either

RBSW A or RBSVS/CRAC chiller 3A since shutting down either load will still allow 2-100% capacity RBSW & RBSVS/CRAC Subsystems.

° If students select any of the following loads for shutdown, discuss the potential problems associated with each choice.

- RBSVS A
  Failure of RBSVS B component could result in a total loss fo RBSVS until the A system is restarted.

- RBCLCW PUMP A
  No cooling to A Reactor Recirc Pump Seal. No Cooling to RHR Pumps A & C for shutdown cooling mode operation.

Point out that Level > TAF is Primary assurance of adequate core cooling.

Also point out the fact that initiation of SP cooling/SP Spray DW Spray will cause some RHR flow to be diverted from the RPV.

Starting B components in this situation may cause EDG 102 load to exceed 3300 KW.

After appropriate corrective actions have been discussed to reduce EDG 101 load to < 3300 KW, ask students what could have caused load to exceed 3300 KW.

- CS PUMP A
  RPV level has NOT been restored to +12.5 o°o maximum water injection to RPV is DESIRABLE.

- RHR PUMP A
  RPV level has NOT been restored to +12.5 o°o maximum water injection to RPV is desirable.

- CRAC ACU 7A & FAN 25A
  ACU 7B & Fan 25B would have to be started prior to shutting down the A components.

° Have Students use 29.015.01 to determine possible causes of EDG load being greater than 3300 KW.

- failure of a load shed circuit.

- 4KV motor overload.

  125% overload should cause a motor overload annunciator.

  200% overload should cause the affected motor load to trip.

- 480V motor overload should cause thermal overloads to trip and clear overload condition

LOOP/LOCA CONDITION WITH EDG 102 load > 3300 KW

TRANSPARENCY 8 and 8A

° Use Transparency 8 and 8A to show Plant Status after a LOOP/LOCA event.

Wait until ate least one student identifies EDG 102 load > 3300 KW.
Then
Hand out sheet 11 of Problem Set

° Have students PRIORITIZE running loads as shown on Transparency 8 using instructor supplied info:

INSTRUCTOR SUPPLIED INFO:

RPV Level +15" and rising
RPV Pressure 100 PSIG
DW Pressure 12 PSIG
SP Temperature 135°F
SP Level +2" indicated
DW Temperature 200°F

Wait until students have completed sheet 11 of the problem set and then ask the crew to decide what load they would shut down.

° Students should select CRD Pump B since it should have tripped due to the LOCA condition.

Stress the fact that all 3 EDG's should be evenly loaded during the course of the accident.

° Review status of systems, listed on Transparency 8, required to bring Reactor to COLD SHUTDOWN condition.

RBSW - 1 Pump per RBSW Loop
(A or C & B or D)

RBSVS/CRAC - 1 chiller per RBSVS/CRAC Loop.
(3A or 4A & 3B or 4B)

RBSVS - 1 RBSVS subsystem
(A or B)

RBCLCW - 1 RBCLCW Pump per loop.
(A or C & B or C)

Review fact that C RBCLCW Pump is locked out for ten minutes after a LOCA. If restarted operator must ensure C Pump is valved into appropriate RBCLCW loop.

CS - number of pumps dependent on size of break. Combination of CS & RHR pumps should maintain RPV level between +12.5" and 54.5"

RHR - used in conjunction with CS pumps to maintain RPV level between +12.5" and 54.5". Also required for long term shutdown cooling as well as suppression pool cooling.

LOOP CONDITION WITH EDG 103 load > 3000KW

TRANSPARENCY 9 and 9A

- Use TRANSPARENCY 9 and 9A to show Plant Status during a LOOP event.
- Point out to students that it is approximately ten minutes into the LOOP event and that:
  - repeated attempts have been made to start HPCI & RCIC.
  - HPCI & RCIC can NOT be restarted.
  - Watch Engineer has made the decision that he will depressurize the RPV & reflood using LPCI pumps as per the Level Restoration procedure.

If asked, supply following plant conditions:

RPV level - 60" and decreasing
RPV Pressure controlled between 800 PSIG & 960 PSIG using a single SRV.
DW Pressure 0.7 PSIG
SP Temperature 115°F
SP Level +3" indicated
DW Temperature 150°F
A RHR loop in SP Cooling.

Ask students if the RPV can be depressurized with this lineup as per the Level Restoration Procedure.

- Have students review Transparencies 9 and 9A

If students answer NO to above question:

- Review Level Restoration Procedure with class to show that lineup is acceptable for depressurization.

If students answer YES to above question: TRANSPARENCY 9B

- Use Transparency 9B to show EDG loadings after the RPV has been depressurized.

Stress fact that as the RPV has depressurized, the CS & RHR pumps lined up for injection have gone from minimum flow to rated flow. o o o EDG load has increased.

- If a LOCA signal is NOT received during the blowdown $\approx$ 340KW of load on EDG 103 will NOT load shed.

Ask students what action they would take at this time?

- Students should decide to shutdown all loads that automatically load shed on a LOCA signal.

- 3 loads that automatically load shed must be shutdown in the 103 emergency switchgear room.

  1) Lighting (227.2KW)

  2) RPS Backup Transformers (20KW)

  3) 120V Nonemergency feeds (12KW)

Point out that all automatically load shed loads can be disconnected from the Main Control Room using the Core Spray Manual Initiation pushbuttons.

EDG Qualified Load Background Info:

3300 KW Qualified Load

MESL = Maximum Emergency Service Load

MESL = Summation of all loads which will be simultaneously connected to an EDG.

. Developed after review of MESL for various events.

. MESL occurs for the LOOP/LOCA event.

Transparency 10

. Use transparency 10 and point out the following:

During actual situation EDG load may be 400 KW less than used in our classroom exampler.

MESL = 3254 KW
ACTUAL IET = 2834 KW

Transparency 11, 12

. Do same for transparencies 11 & 12.

. Actual EDG surveillance test is conducted at 3300KW ± 100KW

MANUALLY CONNECTABLE LOADS

Referred to in Containment Control Emergency Procedure

. H_2 Recombiner

- Not required until ≈ 48 hours after a LOOP/LOCA (DBA)

- Each Recombiner sized to recombine amount of H_2 generated by radiolysis.

If MSIV-LCS is required either inboard or outboard system can be run.

. MSIV LCS (Outboard System)

- Placed in service ≈ 20 minutes after a LOCA if steam line pressure < 35 psig

. MSIV LCS (Inboard System)

- Placed in service ≈ 20 minutes after a LOCA if steam line pressure < 35 psig

. Suppression Pool Pumpback Pump

Should not be started unless Rx Bldg Flooding symptoms exist.

- Only required if water is leaking into Secondary Containment.

  i.e., RHR/CS Pump packing leak.

- Caution statement added to SP 23.702.04, Rev. 4

. RPS MG Set

- desirable to regain power to at least 1 RPS bus in order to restore additional Main Control Room RPV level indications.

Referred to in Level Control Emergency Procedure

. CRD Pump A

- Can be restarted 60 seconds after LOCA signal received.

- 200 gpm insignificant when compared to 40,000 gpm reilood capacity of CS & RHR.

Referred to in Containment Control Emergency Procedure

. Drywell Cooling

- Isolated on water side and electrically by a LOCA signal.

For LOCA situations DW cooling would be supplied via DW spray made of RHR as directed in Containment Control Emergency Procedure.

. Main Turbine & RFPT Auxiliaries

Stress fact that these loads should only be considered after RPV and Containment are stabilized

- All 3 turbines supplied with DC lube oil pumps for lube oil supply during coastdown.

. Lighting

Individual areas can be selectively lit by using 23.317.01

- EDG 101 Distribution Supplies Lighting PNL X40-PNL-AC2

- Supplies lighting for:

  Main Control Room
  Emergency Swg Rooms
  EDG Rooms
  EMD Floodlights
  Rx Recirc MG Set Rooms
  Screenwell
  Security Pnls

- EDG 103 Distribution Supplies Lighting Panels:

  X40-PNL-AC1
  T51-PNL-AC2

- X40-PNL-AC1

  1) Lights for all elevations in Turbine Bldg. and Radwaste Bldg.

  2) Lighting for Main Control Room, EDG Rooms, Emergency Swgr Rooms, Relay Room, Computer Room.

- T51-PNL-AC2

  1) Lighting for all Rx Bldg elevations

. SBLC & Auxiliaries

Dilution effect of low pressure ECCS pumps.

- Of little use during LOCA conditon.

. RWCU Pumps

Referred to in Rapid Depressurization Emergency Procedure

- With LOCA signal present RBCLCW isolated from RWCU - non-gen Hx's.

- Of little value for depressurization purposes.

List of Transparencies

1	Loss of Offsite Power - Plant Status prior to
2	Loss of Offsite Power - Plant Status after
2A	Loss of Offsite Power - EDG Load after
3	LOOP/LOCA - Plant Status prior to
4	LOOP/LOCA - Plant Status after
4A	LOOP/LOCA - EDG Load after
5	LOOP/ATWAS - Plant Status prior to
6	LOOP/ATWAS - Plant Status after
6A	LOOP/ATWAS - EDG Load after
7	LOOP/LOCA Plant Status after (HPCI & RCIC Inop)
7A	LOOP/LOCA EDG 101 LOAD 3300KW
8	LOOP/LOCA Plant Status after
8A	LOOP/LOCA EDG 102 Load 3300KW
9	LOOP Plant Status after (HPCI & RCIC Inop)
9A	LOOP EDG Loads Prior to Depressurization
9B	LOOP EDG 103 Load 3300KW After Depressurization
10	LOOP/LOCA Load Profile - EDG 101
11	LOOP/LOCA Load Profile - EDG 102
12	LOOP/LOCA Load Profile - EDG 103

TRANSPARENCY 1

LOSS OF OFFSITE POWER-PLANT STATUS PRIOR TO

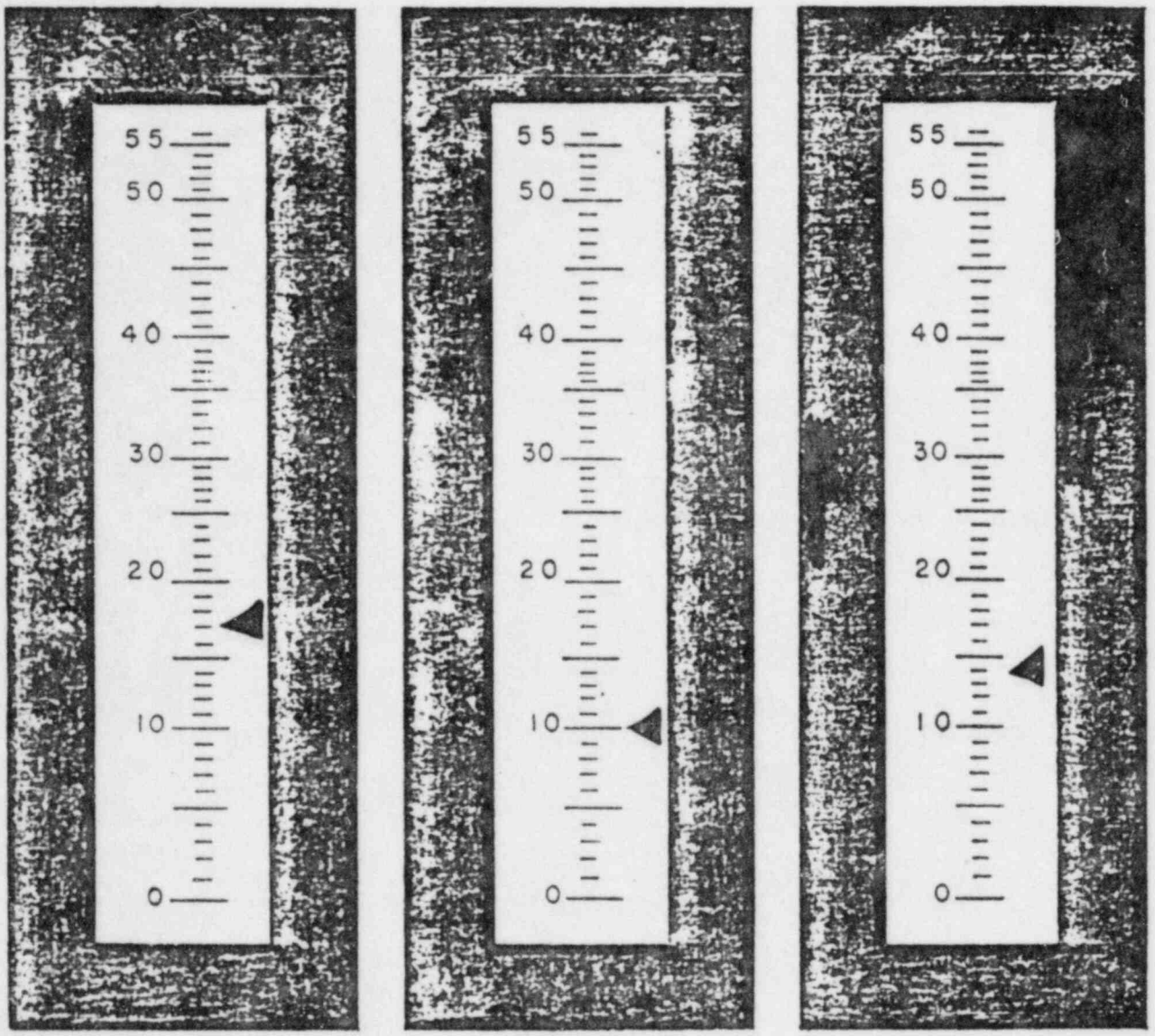
A LOSS OF OFFSITE POWER HAS OCCURRED WITH THE REACTOR OPERATING AT 100% POWER. PRIOR TO THE LOSS OF OFFSITE POWER THE STATUS OF SNPS PLANT SYSTEMS WAS AS FOLLOWS:

SYSTEM	STATUS
RPS	ALL 8 SCRAM SOLENOID POWER LIGHTS ON
NS4	NO ISOLATION SIGNAL PRESENT
SRV's	CLOSED
CONDENSATE PUMPS	A & B RUNNING
RFP's	A & B RUNNING
CRD PUMPS	A RUNNING
RBSW PUMPS	B & C RUNNING
RBSVS/CRAC CHILLERS	3A & 3B RUNNING
RBSVS FILTER TRAINS	NONE RUNNING
RBCLCW PUMPS	A & B RUNNING (C LINED UP TO A LOOP)
CORE SPRAY PUMPS	A RUNNING FOR SURVEILLANCE TEST B NOT RUNNING
RHR PUMPS	NONE RUNNING
RWCU PUMPS	A RUNNING
CRAC SYSTEM	ACU 7A RUNNING BOTH CRAC BOOSTER FANS NOT RUNNING
HPCI	DISASSEMBLED FOR MAINTENANCE
RCIC	FAILED TO START DURING SURVEILLANCE TESTING
EDG's	ALL 3 IN STAND BY

TRANSPARENCY 2

LOSS OF OFFSITE POWER-PLANT STATUS AFTER

SYSTEM	STATUS
RPS	FULL SCRAM SIGNAL (ALL RODS IN)
NS4	FULL ISOLATION
SRV's	LOWEST SET SRV's CYCLING TO MAINTAIN RX PRESSURE
CONDENSATE PUMPS	NONE RUNNING
RFP's	NONE RUNNING
CRD PUMPS	A RUNNING
RBSW PUMPS	A & B & C RUNNING
RBSVS/CRAC CHILLERS	3A & 3B & 4A & 4B RUNNING
RBSVS FILTER TRAINS	A & B RUNNING
RBCLCW PUMPS	A & B RUNNING
CORE SPRAY PUMPS	NONE RUNNING
RHR PUMPS	NONE RUNNING
RWCU PUMPS	NONE RUNNING
CRAC SYSTEM	ACU 7A RUNNING "A" BOOSTER FAN RUNNING
EDG's	101 & 102 & 103 RUNNING AT 4160V & 60 HERTZ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TRANSPARENCY 3

LOOP/LOCA PLANT STATUS PRIOR TO

A LOOP/LOCA HAS OCCURRED WITH THE REACTOR OPERATING AT 100% POWER. PRIOR TO THE LOOP/LOCA THE STATUS OF SNPS PLANT SYSTEMS WAS AS FOLLOWS:

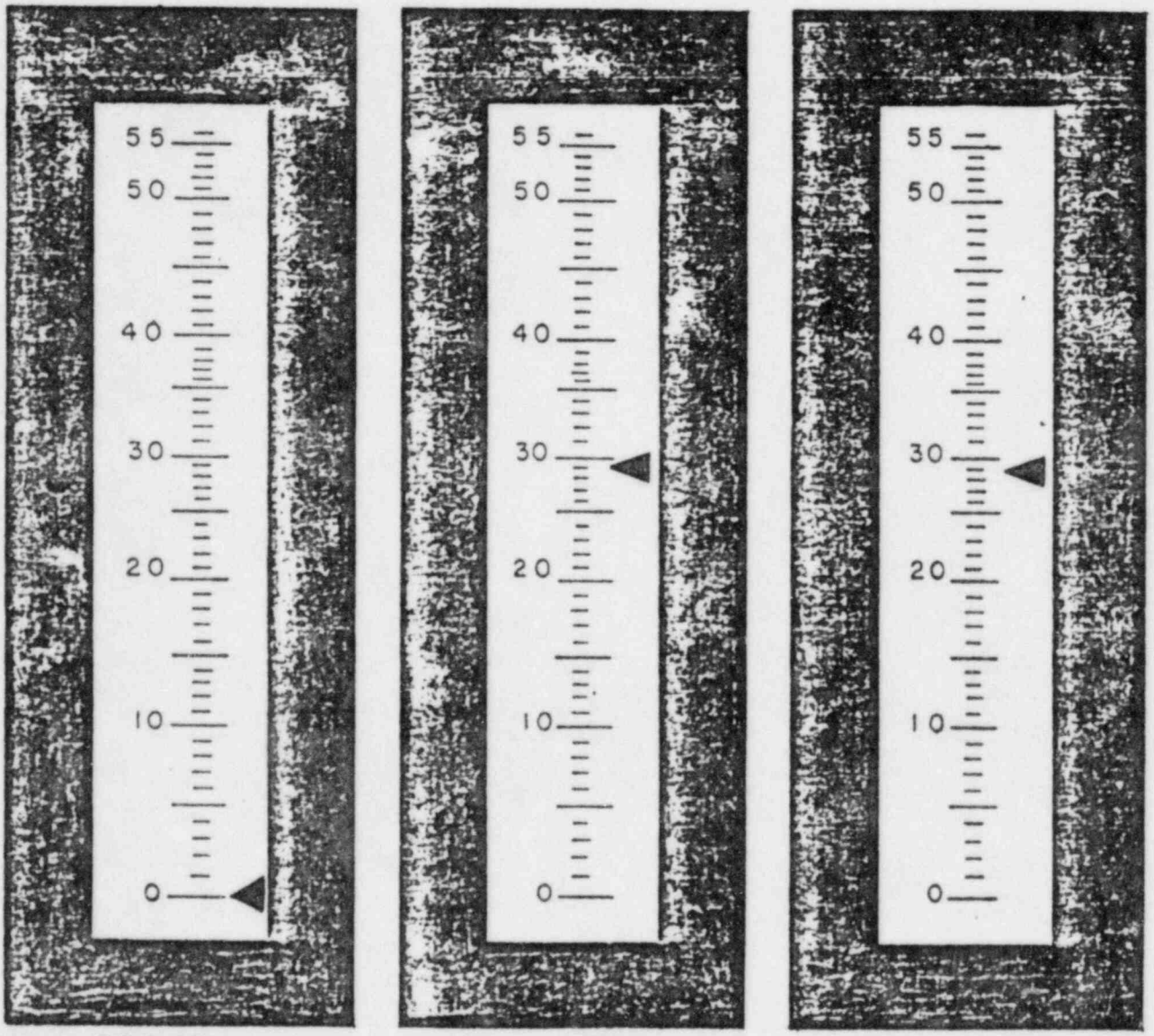
SYSTEM	STATUS
RPS	ALL 8 SCRAM SOLENOID POWER LIGHTS ON
NS4	NO ISOLATION SIGNAL PRESENT
SRV's	CLOSED
CONDENSATE PUMPS	A & B RUNNING
RFP's	A & B RUNNING
CRD PUMPS	A RUNNING
RBSW PUMPS	A & C RUNNING B DISASSEMBELD FOR MAINTENANCE
RBSVS/CRAC CHILLERS	3A & 3B RUNNING
RBSVS FILTER TRAINS	NONE RUNNING
RBCLCW PUMPS	A & B RUNNING (C LINED UP TO A LOOP)
CORE SPRAY PUMPS	A RUNNING FOR SURVEILLANCE TEST B NOT RUNNING
RHR PUMPS	NONE RUNNING
RWCU PUMPS	A RUNNING
CRAC SYSTEM	ACU 7A RUNNING BOTH CRAC BOOSTER FANS NOT RUNNING
HPCI	DISASSEMBLED FOR MAINTENANCE
RCIC	FAILED TO START DURING SURVEILLANCE TESTING
EDG's	ALL 3 IN STAND BY

TRANSPARENCY 4

LOOP/LOCA - PLANT STATUS AFTER

SYSTEM	STATUS
RPS	FULL SCRAM SIGNAL - ALL RODS IN
NS^4	FULL ISOLATION
SRV's	CLOSED
CONDENSATE PUMPS	NONE RUNNING
RFP's	NONE RUNNING
CRD PUMPS	NONE RUNNING
RBSW PUMPS	C PUMP RUNNING
RBSVS/CRAC CHILLERS	3B, 4A, 4B
RBSVS FILTER TRAINS	B RUNNING
RBCLCW PUMPS	B RUNNING
CORE SPRAY PUMPS	B RUNNING
RHR PUMPS	B & C & D RUNNING
RWCU PUMPS	NONE RUNNING
CRAC	ACU 7B RUNNING BOOSTER FAN 25B RUNNING
EDG's	102 & 103 RUNNING AND SUPPLYING EMERGENCY BUSES 101 FAILED TO START AND CAN NOT BE STARTED MANUALLY
RCIC	ISOLATED
HPCI	ISOLATED
RX BLDG EXHAUST FANS	C RUNNING

TRANSPARENCY 4A



TRANSPARENCY 5

LOOP/ATWAS PLANT STATUS PRIOR TO

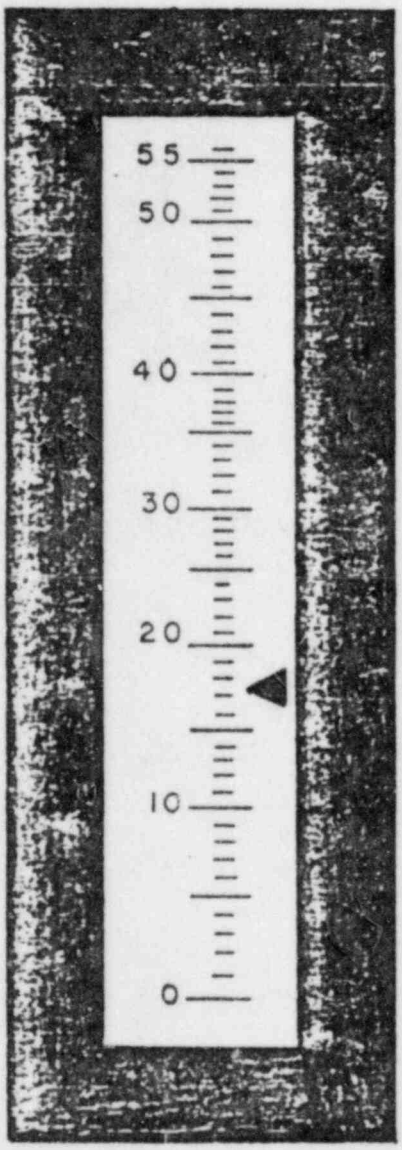
LOOP/ATWAS HAS OCCURRED WITH THE REACTOR OPERATING AT 100% POWER. PRIOR TO THE LOOP/ATWAS THE STATUS OF SNPS PLANT SYSTEMS WAS AS FOLLOWS:

SYSTEM	STATUS
RPS	ALL 8 SCRAM SOLENOID POWER LIGHTS ON
NS4	NO ISOLATION SIGNAL PRESENT
SRV's	CLOSED
CONDENSATE PUMPS	A & B RUNNING
RFP's	A & B RUNNING
CRD PUMPS	A RUNNING
RBSW PUMPS	B & C RUNNING
RBSVS/CRAC CHILLERS	3A & 4B RUNNING
RBSVS FILTER TRAINS	NONE RUNNING
RX BLDG EXHAUST FANS	A&B RUNNING
RBCLCW PUMPS	A & B RUNNING (C LINED UP TO A LOOP)
CORE SPRAY PUMPS	NONE RUNNING
RHR PUMPS	C RHR PUMP RUNNING FOR SURVEILLANCE TEST
RWCU PUMPS	A RUNNING
CRAC SYSTEM	ACU 7A RUNNING BOTH CRAC BOOSTER FANS NOT RUNNING
HPCI	STANDBY
RCIC	DISASSEMBLED FOR MAINTENANCE
EDG's	ALL 3 IN STAND BY

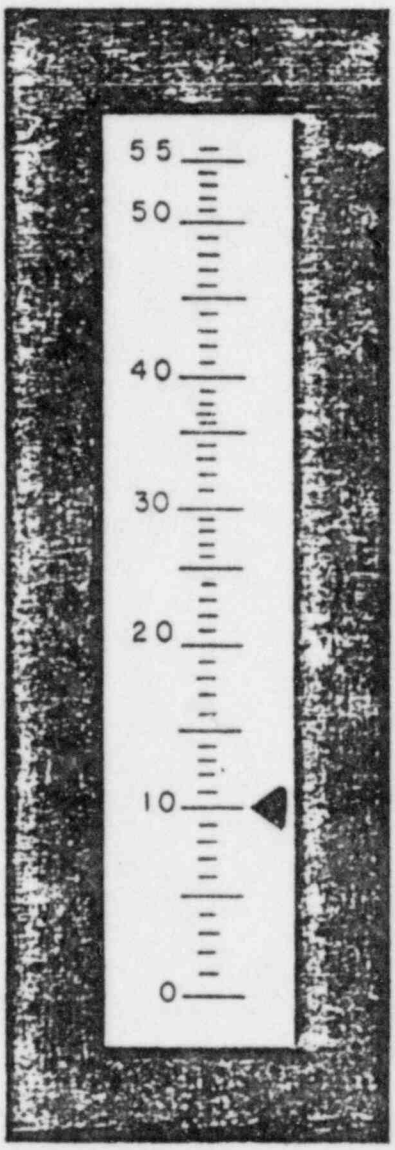
TRANSPARENCY 6

LOOP/ATWAS PLANT STATUS AFTER

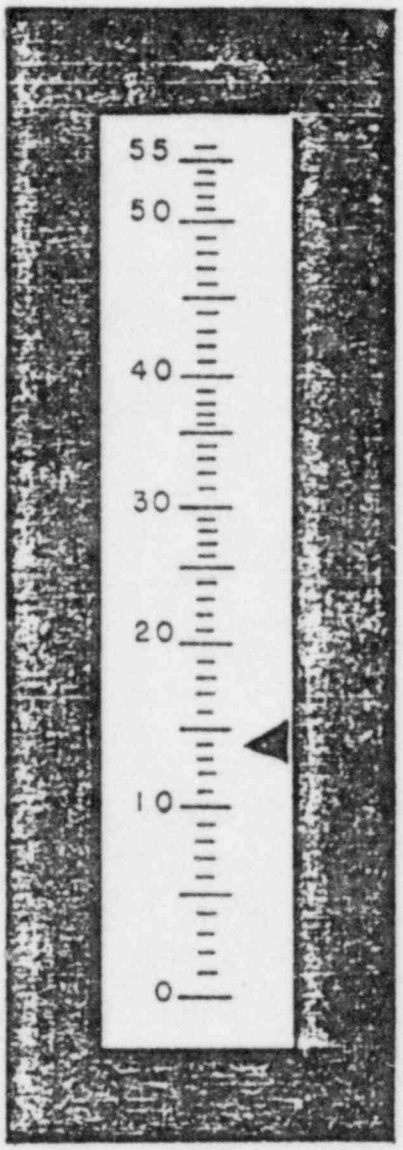
SYSTEM	STATUS
RPS	FULL SCRAM SIGNAL - APPROXIMATELY ½ RODS DO NOT GO FULL IN
NS4	FULL ISOLATION
SRV's	1 SRV OPEN TO CONTROL RX PRESSURE
CONDENSATE PUMPS	NONE RUNNING
RFP's	NONE RUNNING
CRD PUMPS	A RUNNING
RBSW PUMPS	A & B & C RUNNING
RBSVS/CRAC CHILLERS	3A, 3B, 4A, 4B RUNNING
RBSVS FILTER TRAINS	A & B RUNNING
RX BLDG EXHAUST FANS	B RUNNING
RBCLCW PUMPS	A & B RUNNING
CORE SPRAY PUMPS	NONE RUNNING
RHR PUMPS	NONE RUNNING
RWCU PUMPS	NONE RUNNING
CRAC SYSTEM	ACU 7A RUNNING BOOSTER FAN 25A RUNNING
EDG's	101 & 102 & 103 RUNNING AT 4160V & 60 HERTZ
HPCI	RUNNING
RCIC	DISASSEMBLED FOR MAINTENANCE



EDG 101
KW



EDG 103
KW



EDG 102
KW

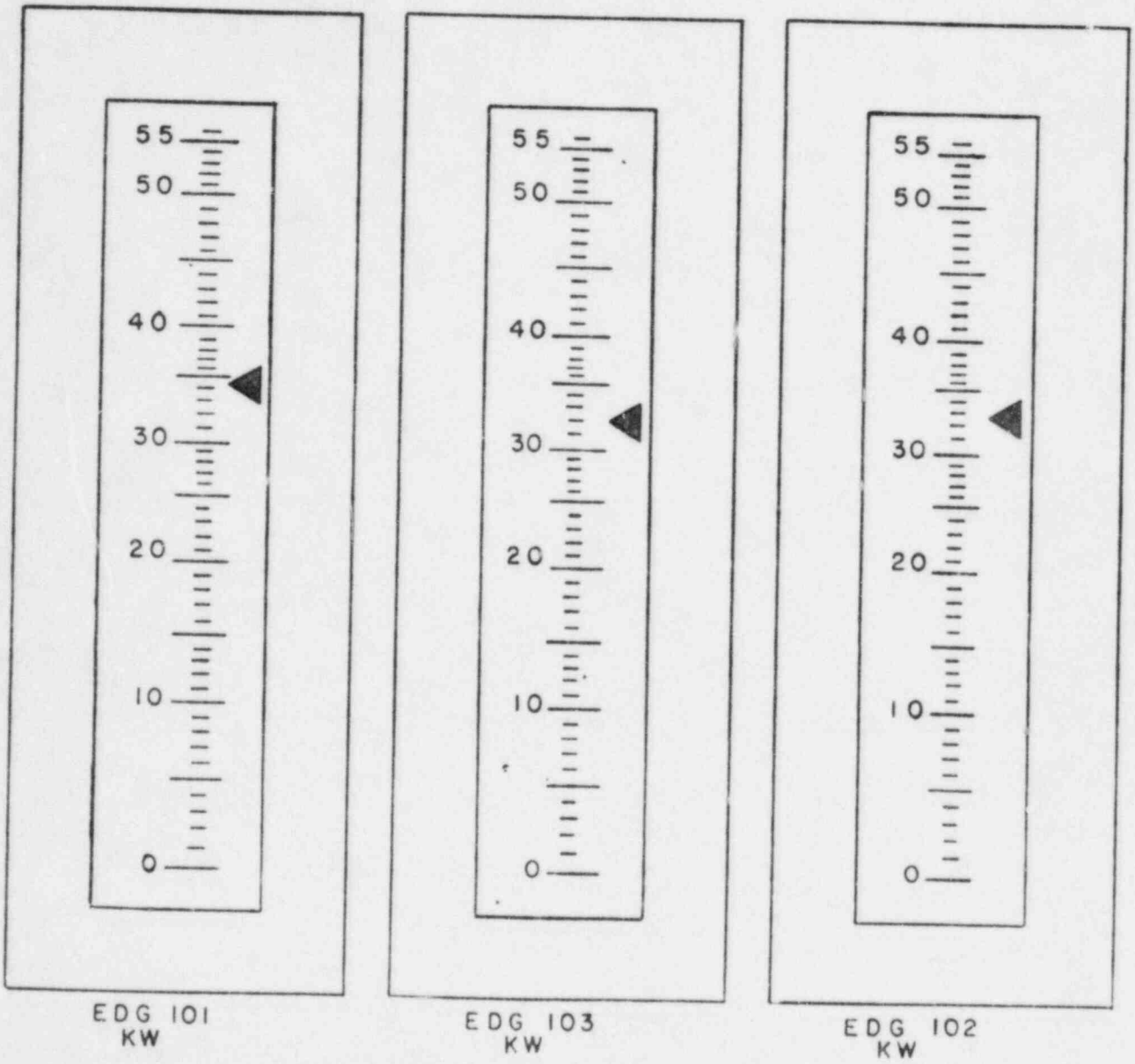
TRANSPARENCY 7
EDG101 Load > 3300KW

LOOP/LOCA PLANT STATUS AFTER (HPCI & RCIC INOP)

A LOOP/LOCA has occurred with the Reactor operating at 100% power. Immediately after the LOOP/LOCA the status of SNPS plant systems is as follows:

SYSTEM	STATUS
RPS	Full Scram Signal - all rods in
NS^4	+ 12.5" RPV level isolation - 38" RPV level isolation + 1.69 psig DW Pressure isolation
SRV's	Closed
Condensate Pumps	None Running
RFP's	None Running
CRD Pumps	None Running
RBSW Pumps	A & B & C Running
RBSVS/CRAC Chillers	3A & 3B & 4A & 4B Running
RBSVS Filter Trains	A & B running
RBCLCW Pumps	A & B running
Core Spray Pumps	A & B running
RHR Pumps	A & B & C & D Running
RWCU Pumps	None Running
CRAC System	ACU 7A running CRAC Booster Fan 25A Running
HPCI	Isolated
RCIC	Isolated
EDG's	All 3 running EDG 101 load 3450 KW EDG 102 load 3250 KW EDG 103 load 3200 KW

TRANSPARENCY 7.



TRANSPARENCY 8
EDG 102 load > 3300 KW

LOOP/LOCA PLANT STATUS AFTER

A LOOP/LOCA has occured with the reactor operating at 100% power. Immediately after the LOOP/LOCA the status of SNPS plant system is as follows:

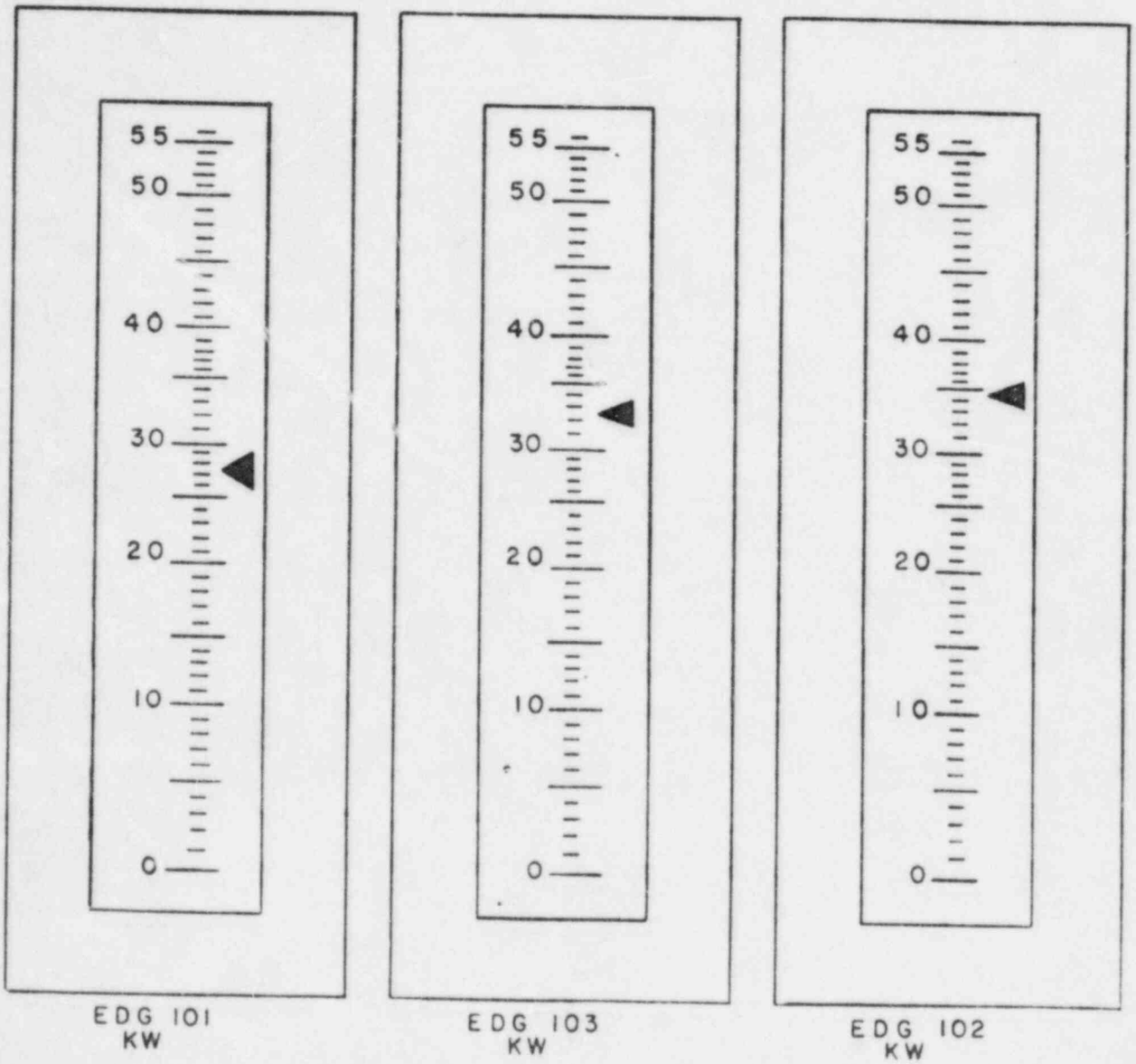
SYSTEM	STATUS
RPS	Rull Scram Signal - All rods in
NS^4	+12.5" RPV level isolation - 38" RPV level isolation + 1.69 PSIG DW Pressure isolation
SRV's	Closed
Condensate Pumps	None Running
RFP's	None Running
CRD Pumps	B Running
RBSW Pumps	A,B & C Running
RBSVS/CRAC Chillers	3A,3B,4A & 4B Running
RBSVS Filter Trains	A & B Running
RBCLCW Pumps	A & B Running
Core Spray Pumps	A & B Running
RHR Pumps	A,B,C & D Running
RWCU Pumps	None Running
CRAC System	ACU 7B Running CRAC Booster Fan 25B Running
HPCI	Isolated
RCIC	Isolated
EDG's	All 3 Running
	EDG 102 Load 3450 KW

TRANSPARENCY 9
EDG 103 load > 3300 KW

LOOP PLANT STATUS AFTER (HPCI & RCIC INOP)

A LOOP has occured with the Reactor operating at 100% power. Approximately ten minutes into the event, the Watch Supervisor determines that the running CRD pump will NOT maintain RPV level > TAF, and directs that the Reactor be depressurized to restore level using the CS and RHR pumps. Just prior to Depressurizing, the plant status is as follows:

SYSTEM	STATUS
RPS	Full Scram Signal - All rods in
NS^4	+12.5" RPV level isolation -38" RPV level isolation +1.69 PSIG DW pressure isolation
SRV's	Closed
Condensate Pumps	None Running
RFP's	None Running
CRD Pumps	A Running
RBSW Pumps	A,B & C All Running
RBSVS/CRAC Chillers	3A,3B & 4A Running
RBSVS Filter Trains	A & B Running
RBCLCW Pumps	A & B Running
Core Spray Pumps	B Running
RHR Pumps	C & D Running
RWCU Pumps	None Running
CRAC System	ACU 7A Running
HPCI	CRAC Booster for 25A Running
RCIC	Isolated
EDG's	All 3 Running EDG 101 load EDG 102 load EDG 103 load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50
40
30
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10
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EDG 101
KW
55
50
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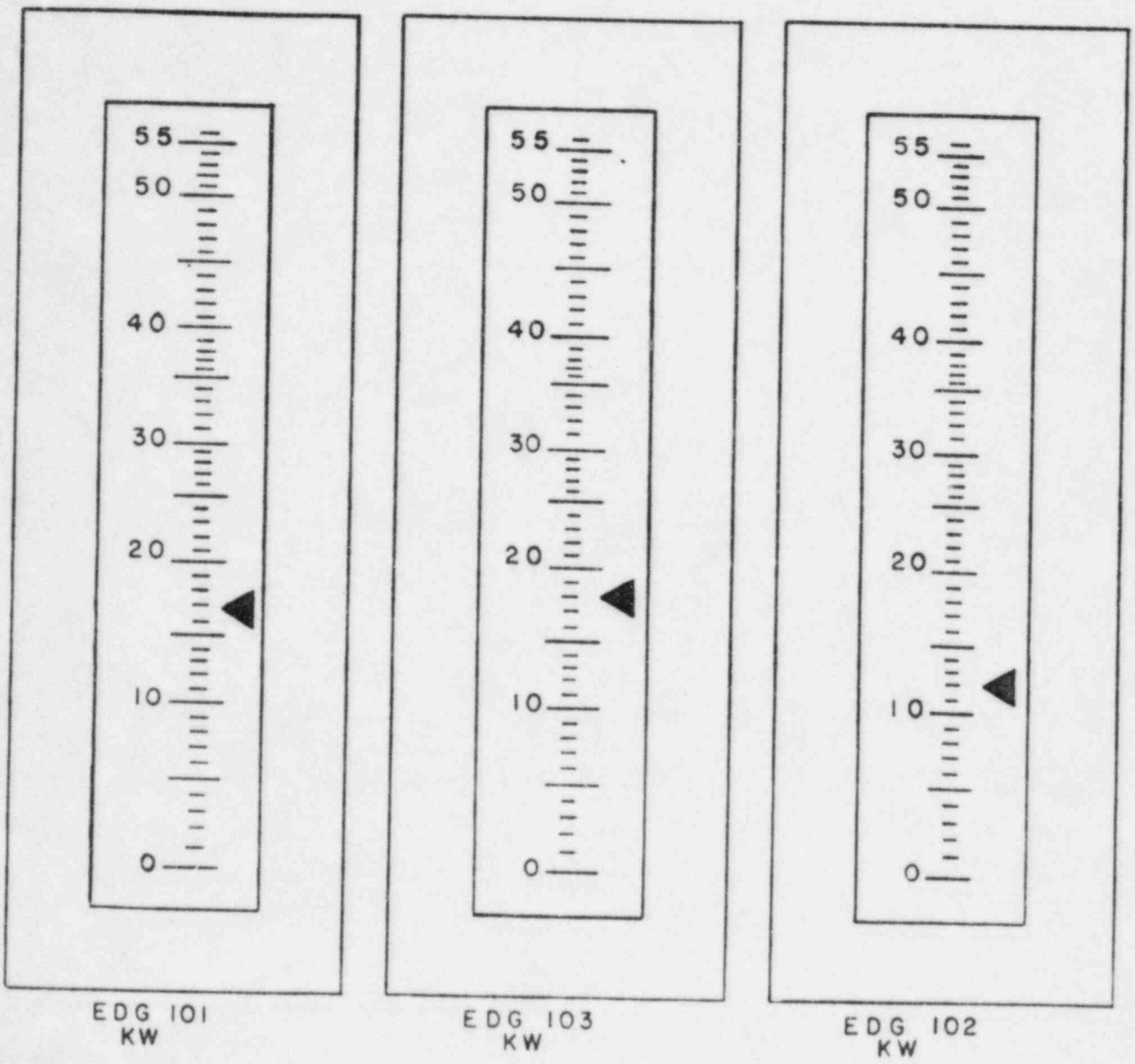
EDG 103
KW
55
50
40
30
20
10
0
EDG 102
KW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EDG 101
KW
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EDG 103
KW
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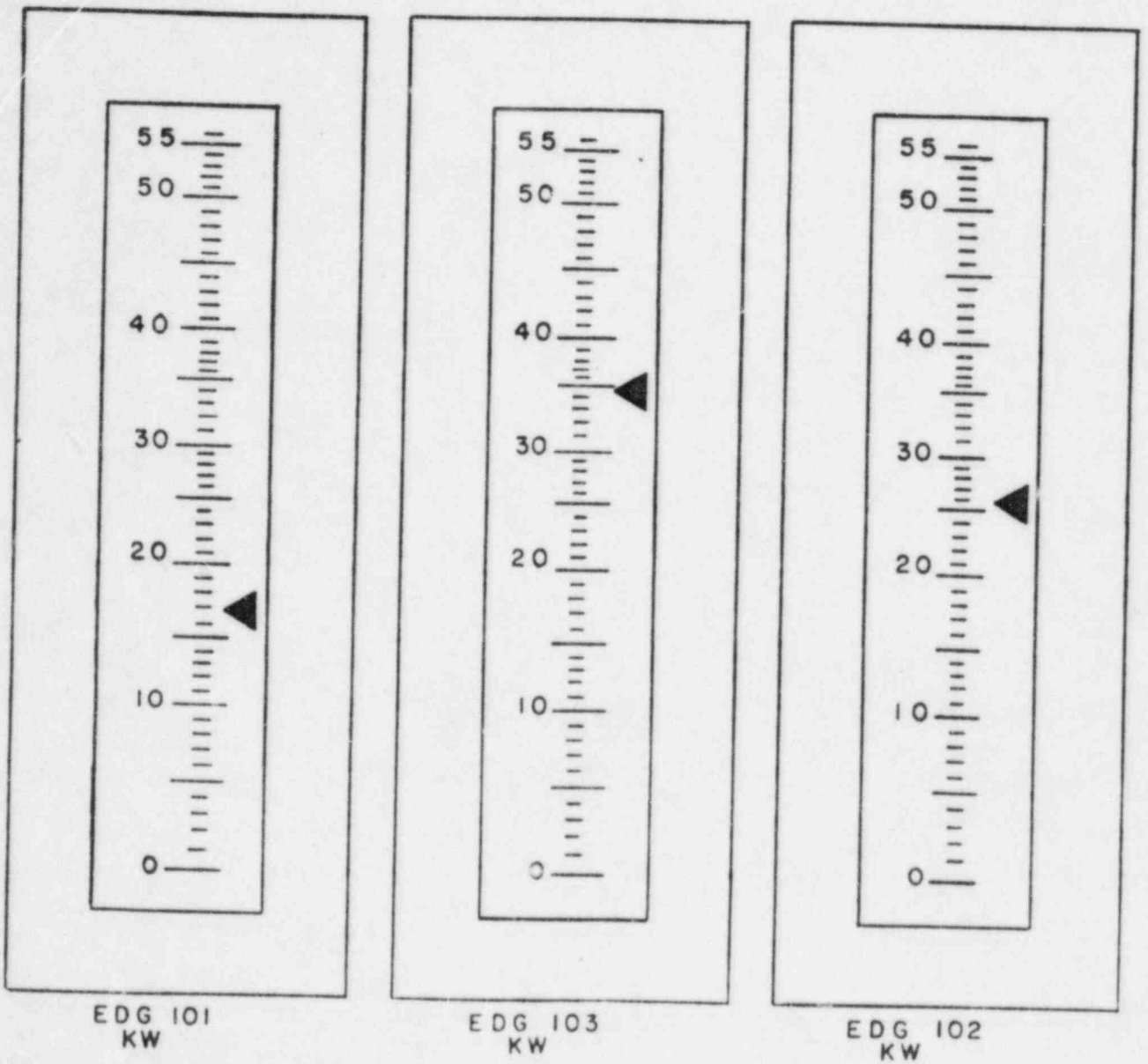
EDG 102
KW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EDG 101
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EDG 103
KW
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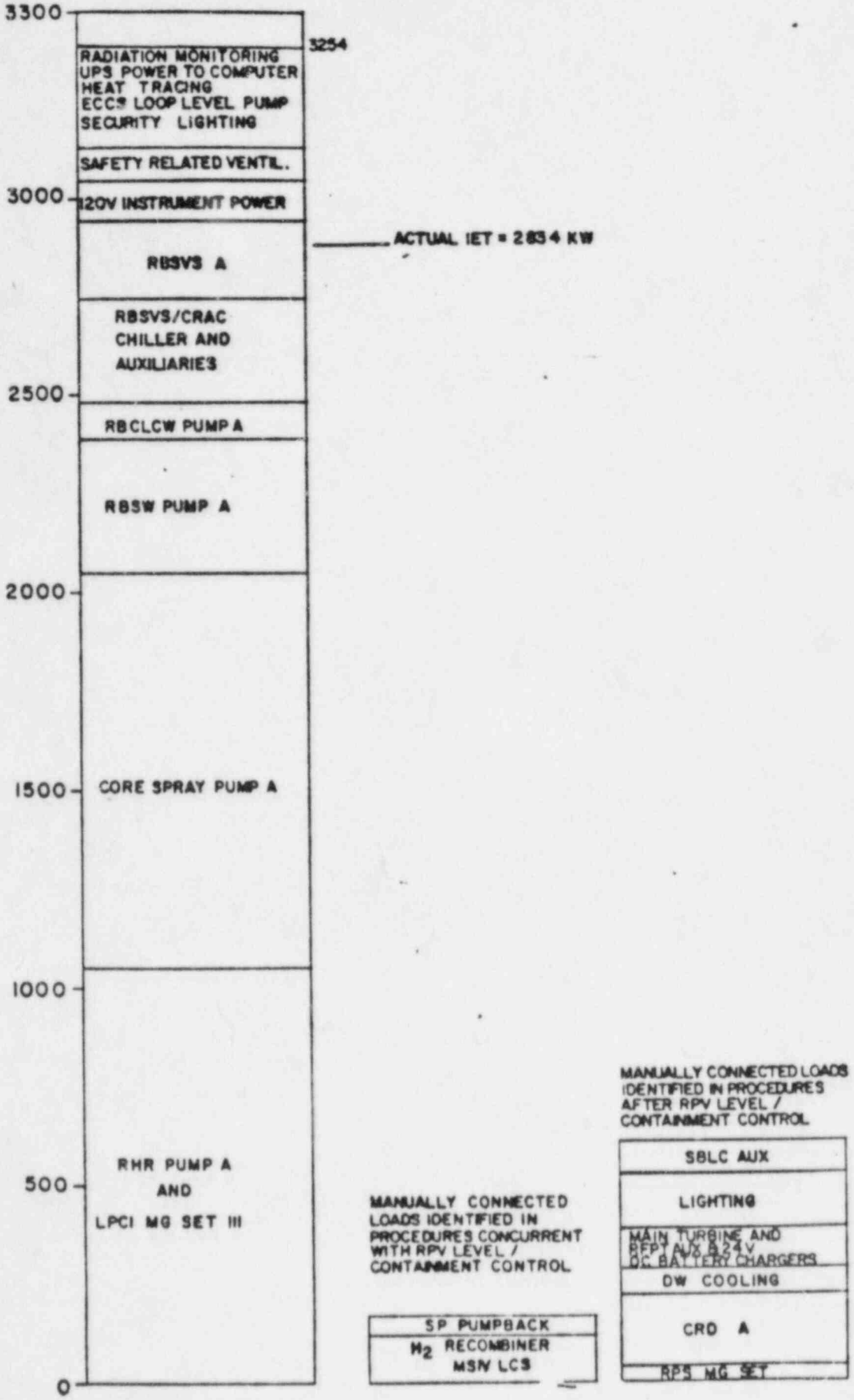
EDG 102
KW

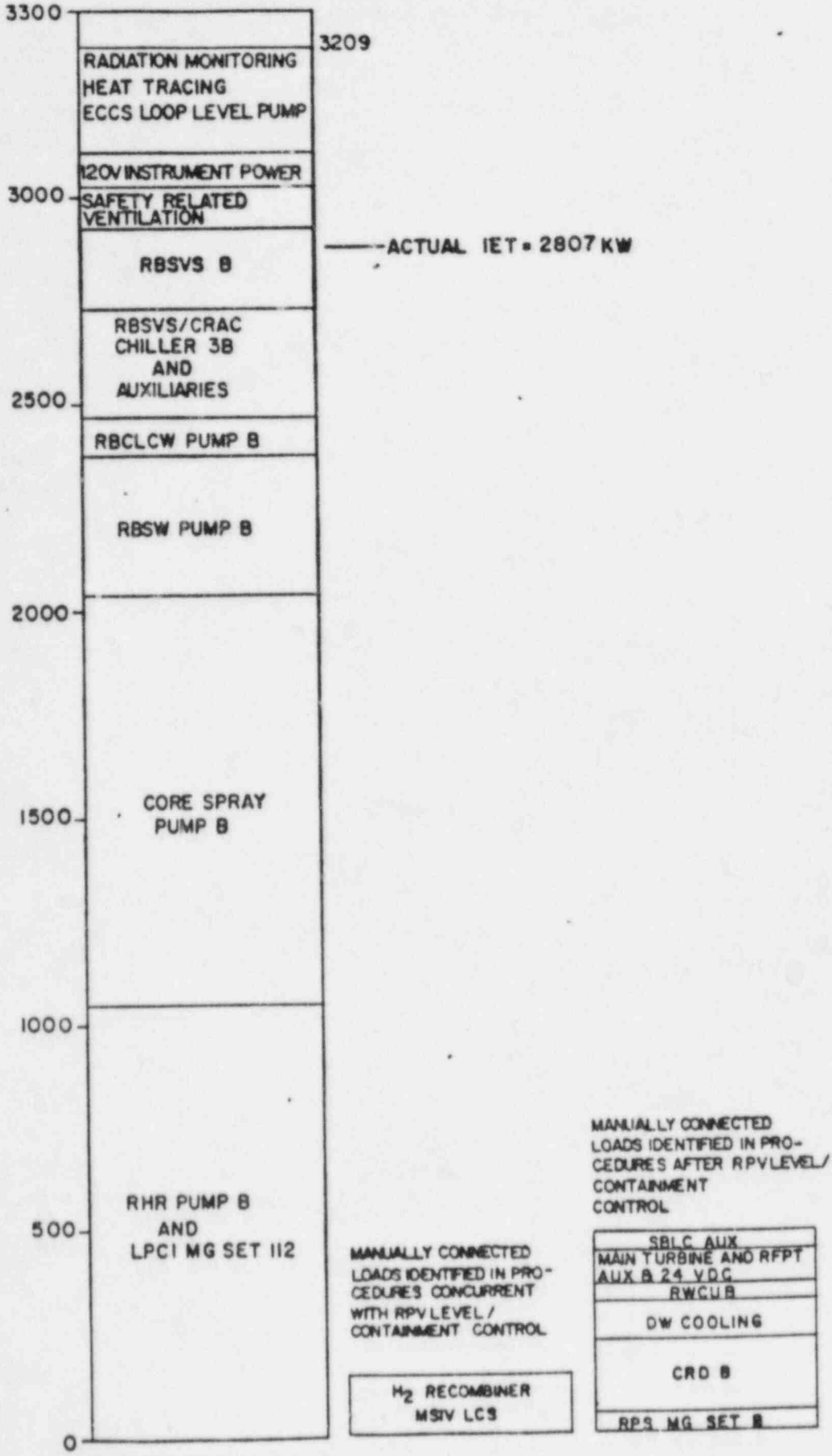
EDG 101 LOOP/LOCA LOAD PROFILE

TRANSPARENCY 10



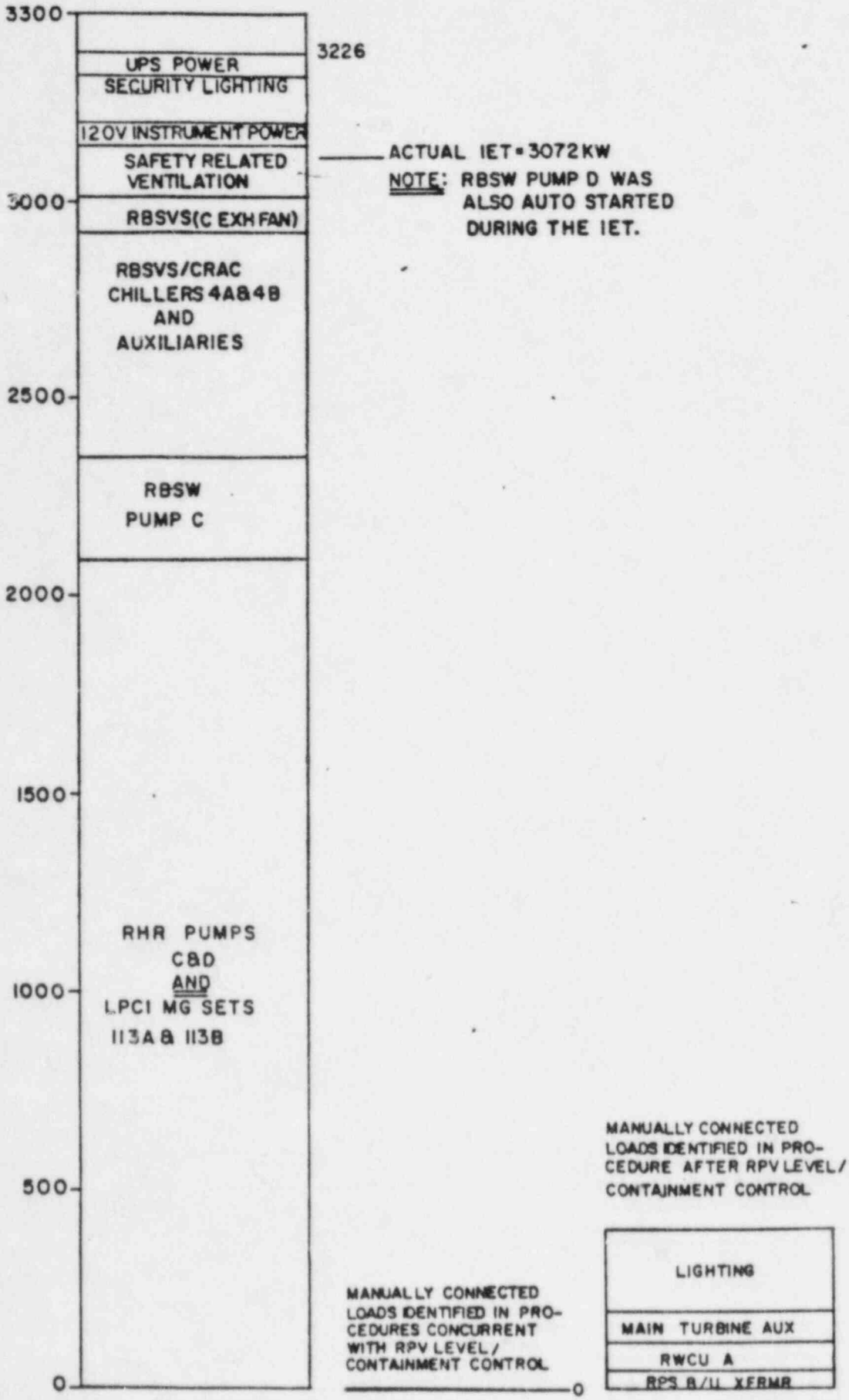
EDG 102 LOOP/LOCA LOAD PROFILE

TRANSPARENCY 11



EDG 103 LOOP/LOCA LOAD PROFILE

TRANSPARENCY 12



ATTACHMENT 6

SNPS Revised Procedures

LIST OF PROCEDURES

1.	Loss of Offsite Power	- SP 29.015.01, Rev. 9
2.	Level Control	- SP 29.023.01, Rev. 5
3.	Emergency Shutdown	- SP 29.010.01, Rev. 4
4.	Containment Control	- SP 29.023.03, Rev. 9
5.	Emergency Diesel Generators	- SP 23.307.01, Rev. 12
6.	Main Control Room - Conduct of Personnel	- SP 21.004.01, Rev. 8