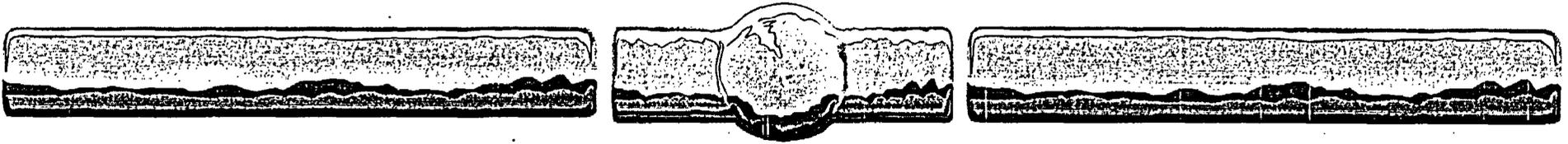


Nuclear Regulatory Commission

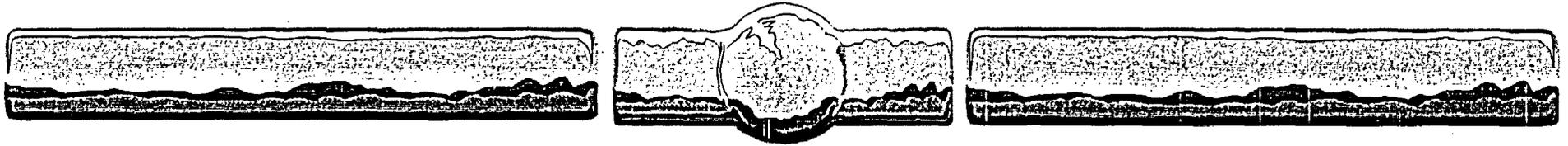
H/K

Augmented Inspection Team
Exit Meeting with
Palo Verde Nuclear Generation
Station



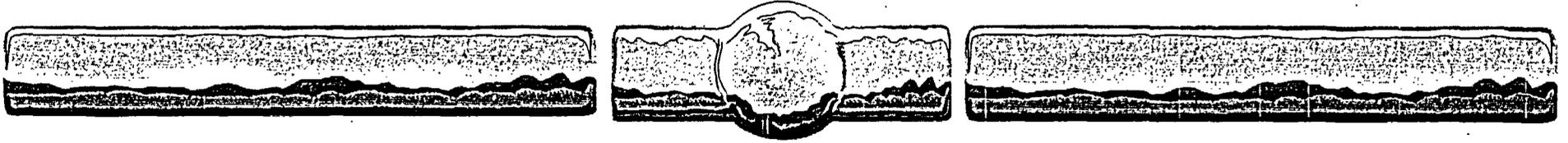
Inspection Charter

- ❖ Basis of Augmented Inspection
- ❖ Develop a complete sequence of events
- ❖ Assess performance of plant systems
- ❖ Assess adequacy of plant procedures



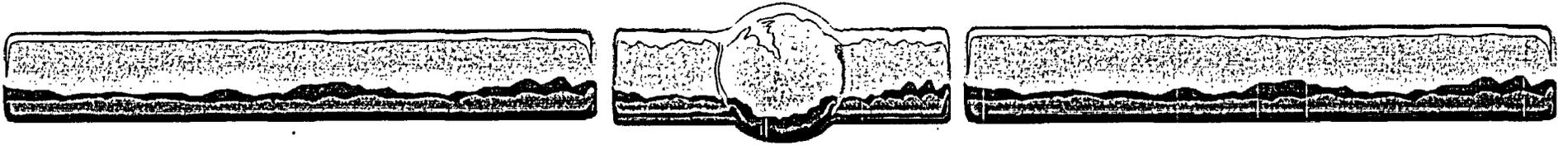
Inspection Charter

- ❖ Assess facility response to event
- ❖ Assess facilities determination of apparent cause
- ❖ Assess maintenance related contributions



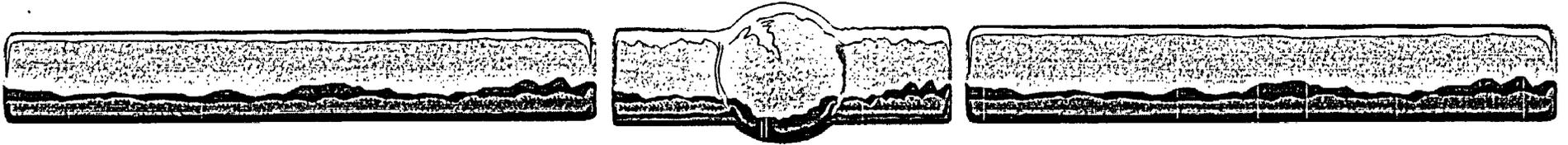
Inspection Charter

- ❖ Assess facility coordination of offsite activities
- ❖ Overall risk assessment of event



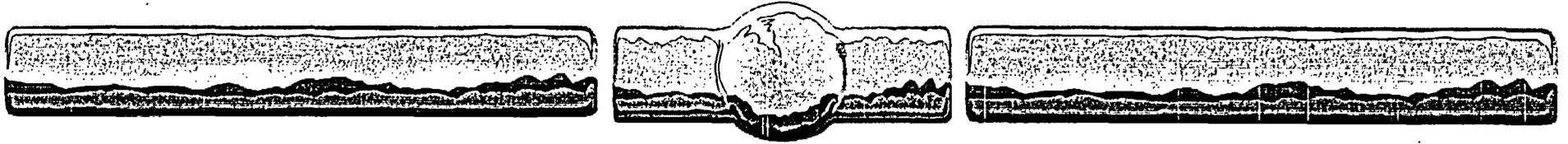
SEQUENCE OF EVENTS

- ❖ Fault Initiation
- ❖ Electrical Transmission and Grid



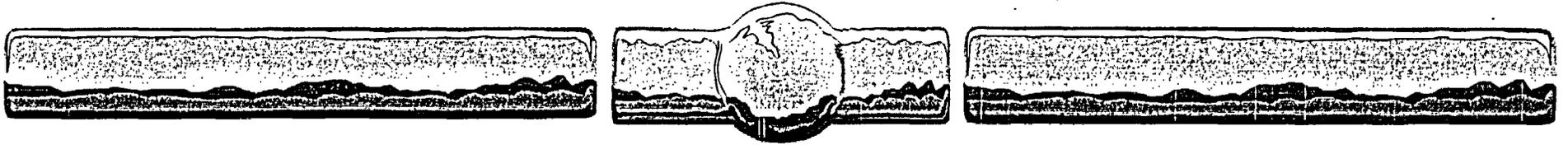
SEQUENCE OF EVENTS

- ❖ Plant Transients and Challenges
- ❖ Other Challenges



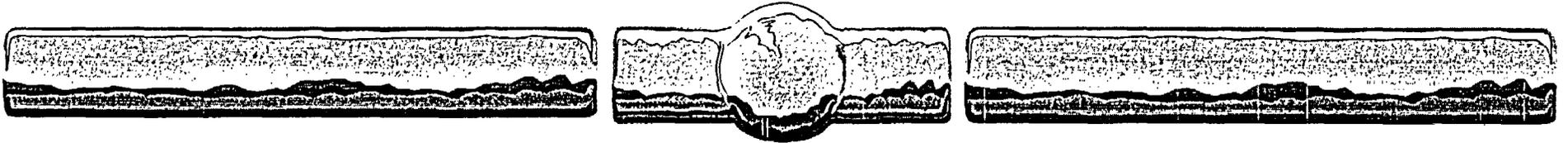
PERFORMANCE OF PLANT SYSTEMS

- ❖ Transmission system protection
- ❖ All three reactors were safely shut down
- ❖ Each unit was stabilized by operators



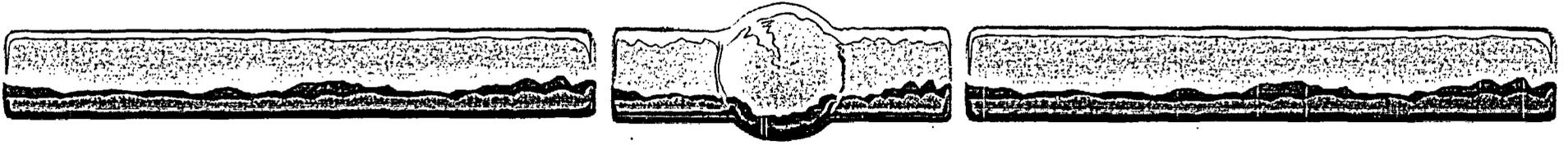
PERFORMANCE OF PLANT SYSTEMS

- ❖ Unit 2 Emergency Diesel Generator failure
- ❖ Other minor equipment problems noted during shutdown



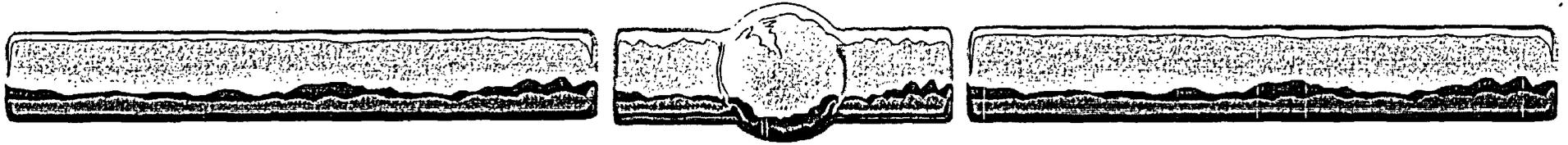
Plant Procedures

- ❖ Procedures used during event were generally acceptable
- ❖ Some issues noted



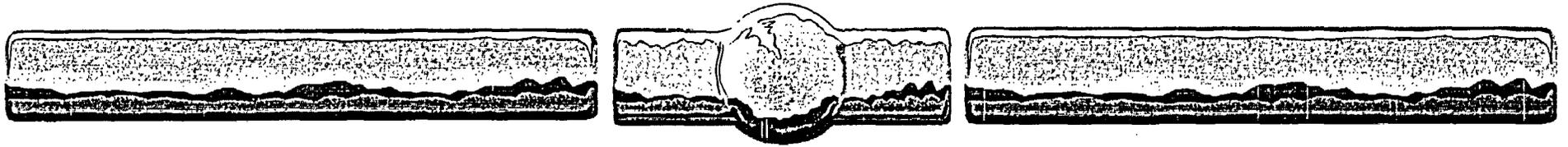
Facility Response

- ❖ Conduct of operations generally good
- ❖ Emergency response organization challenges
- ❖ Some other problems noted by the team



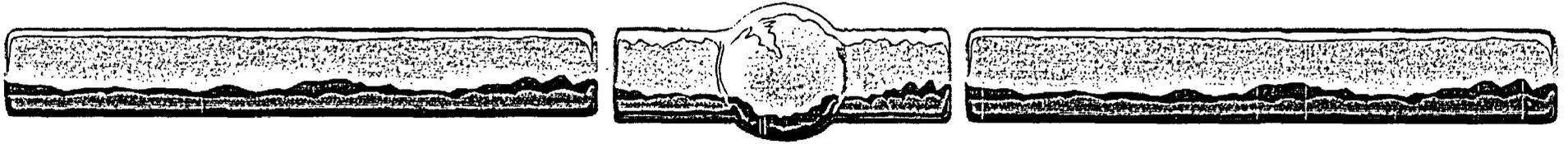
Apparent Causes

- ❖ Electrical fault isolation failure
- ❖ Transmission lines between Hassayampa and Palo Verde switchyard
- ❖ Unit 2 Emergency Diesel Generator failure
- ❖ Technical Support Center Emergency Diesel Generator failure
- ❖ Others



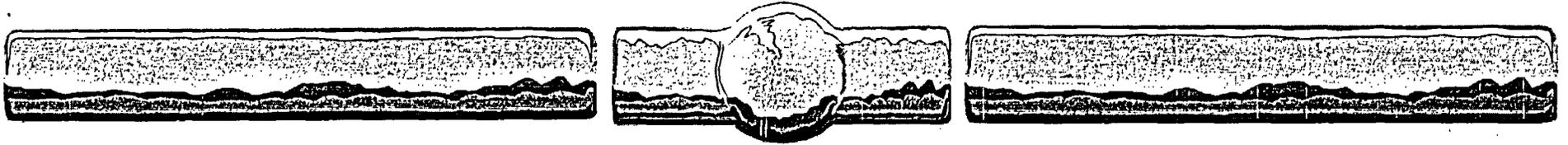
Maintenance Related Aspects

- ❖ Maintenance of switchyard and substation equipment good
- ❖ Implementation of facility maintenance processes



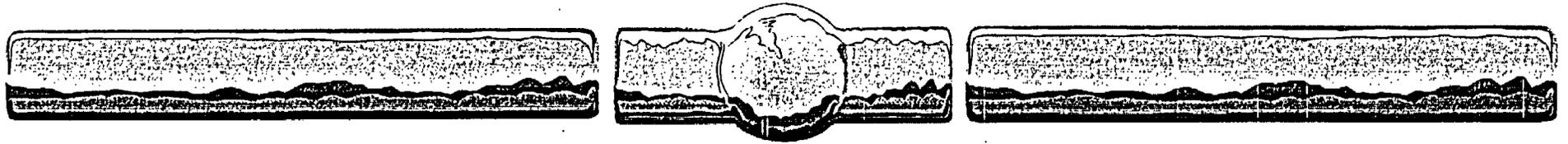
Off-Site Coordination

- ❖ Good coordination of actions following event
- ❖ Unrecognized design issue with Hassayampa to Palo Verde transmission line protection



Overall Risk Assessment

- ❖ Given the loss of approximately 5,500 MWe of electrical generation, the grid performed well
- ❖ Electrical power was restored in a timely manner



Overall Risk Assessment

- ❖ All three units were stabilized and placed in a safe shutdown mode of operation