

VCM Release Prevention
Oklahoma City

F-4

I. Problems

- A. AMS kill system is not completely adequate.
 - 1. Not enough AMS volume.
 - 2. Manual operation requiring too much time.
 - 3. Operator fear of working on reactor topside when reactors are running away.
- B. Premature failure of rupture discs.
 - 1. Potential quality control problems in disc manufacture.
 - 2. Installation problems.
 - 3. Unknown effect of tail lines.

II. Immediate Action

- A. Ordered improved rupture disc holders for reactor double discs. To ship 10-26-79.
- B. Changed out discs on three reactors with BS&B personnel observing.
- C. CED designing new double disc tail lines to improve safety and minimize stresses imposed on rupture disc holders.
- D. Rewriting power failure procedures and retraining all operators.
- E. Installing spare AMS injection nozzles with fittings on each reactor and replacing worn fittings. Providing more AMS storage topside and more nitrogen for AMS system.
- F. Provided windbreak at AMS bomb and enlarged the fill line funnel.
- G. R&D will provide recommendations on shelf life, analytical procedures, etc. for AMS.

III. Plans

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- A. PED to design a reactor kill system which gives us a high degree of confidence that we can adequately kill a reactor in all cases.
- B. PED/CED/R&D to work with disc manufacturer to determine how to prevent the second relief device from relieving when the first relieves prematurely.
- C. PED to re-design the reactor relief system so that double discs are not used.

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III. Plans (Continued)

- D. Plant to consult MED on raising the double disc burst pressure. PED will check the process considerations for such an increase in burst pressure.
- E. PED to recommend proper hydro test procedures for field checking rupture discs at 90% of rated burst pressure.
- F. PED/CED to study the firewater deluge system with emphasis on thermal sensor and instrument air interaction problems.
- G. PED/CED to design back-up power or back-up cooling and agitation capabilities.
- H. PED to design a VCM release control system, i.e., gasholder, flare, etc.
- I. A safety study to be conducted concerning potential fire, explosion, catastrophic failure, etc., hazards and the recommendations to minimize these.

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