

PDR

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DAWN MINING COMPANY
PO BOX 28
TORD, WASHINGTON 99013

January 26, 1981

Mrs. Nancy P. Kirner
Health Services Division, DSHS
Radiation Control Program
PO Box 1788
Olympia, WA 98504



Dear Mrs. Kirner:

Enclosed you will find Dawn's proposed "Operational Inspection and Surveillance of Embankment Retention Systems". This information was requested in License Amendment No. 4, Item 36, dated January 12, 1981.

Yours truly,

DAWN MINING COMPANY

J. E. Thompson
Resident Manager

JET:jc

Enc.

cc: Dan Guillen, NRC (10) ✓
A. Shreffler, DSHS
A. Scroggs, DSHS
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Operational Inspection and Surveillance
of Embankment Retention Systems
For Uranium Mill Tailings
(NRC Regulatory Guide 3.11.1)
at Dawn Mining Company

1. Engineering Data Compilation

Engineering data relating to the design, construction, and operation of the new tailings pit will be collected and contained in a single file to be kept by the operation's mill metallurgist. This file will contain:

A. General Project Data

1. Regional vicinity map showing the project location and the upstream and downstream drainage.¹
2. As-built drawings and photographs of important project features such as pit excavation, liner installation, and drainage systems.²

B. Hydrologic and Hydraulic Data

1. Drainage area basin characteristics.²
2. Storage for tailings and surcharge capacities for floods and rate of slurry inflow.¹
3. Elevation of the maximum design pool and freeboard height.¹
4. Outlet facility characteristics.³

C. Foundation data and geologic features.¹

D. Properties of embankment and foundation materials.²

E. Pertinent construction photographs and records.²

F. Contingency plan, including a plan for the regulation of pond water elevation under normal conditions and during flood events or other emergency conditions.³

G. Principal design assumptions and analysis.¹

H. Special license conditions and discussion on how these conditions have been met.³

¹ Information contained in the final Environmental Impact Statement for the proposed Dawn Mining Company Mill Tailings Expansion Project.

² Information to be contained in a final tailings pond construction report.

³ Information to be gathered in the near future.

2. Onsite Inspection Program

An onsite inspection of the tailings impoundment will be carried out in order that any significant developments be discovered. The inspection shall include the following.

A. Three times per day inspections

1. Any decant system that may be developed shall be inspected by the shift foreman. He shall look for and note in his daily report anything hindering the desired transfer of decant solution including any evidence of leaking.
2. If the underdrain system is used for solution removal, the shift foreman shall inspect and note in his daily report any abnormalities seen.
3. Pond water elevations will be noted and recorded by the shift foreman and reported if solution levels approach ten (10) feet below the top of the dike.
4. Tailings slurry pipelines shall be inspected each shift by the shift foreman with any abnormalities noted in his report. If slurry flow is obstructed by clogging, pipe failure, pump failure, or any other complication, the shift foreman shall initiate the backup pump and line system. The slurry flow-rate sensor shall be checked by the shift foreman and noted if it is not performing properly.
5. The dike surrounding the tailings pit shall be inspected by the shift foreman as to any signs of abnormalities such as erosion or movement. Any developments shall be noted in his daily shift report.

B. Quarterly Inspection

1. Embankment Settlement. The top of the embankment will be examined by the mill metallurgist and surveyed by the mine surveyor for any evidence of unusual localized or overall settlement or depression.
2. Embankment Slope Conditions. The embankment slopes will be surveyed by the mine surveyor for irregularities in alignment and variance from original construction.
3. Seepage. The mill metallurgist will inspect embankment slopes and toes for evidence of existing or past seepage. Monitor wells will also be monitored for seepage evidence.

4. Liner Material. The mill metallurgist will examine liner material at the dike to detect any slippage or movement.
5. Operation and Maintenance Features. All tailings transport systems and any possible decant return systems will be examined by the mill superintendent.
6. Post-Construction Changes. Data will be collected by the mill metallurgist relating to any changes that might influence the safety of the tailings retention system.

C. Special Inspection

Inspections will be made by the mill metallurgist (and any other appropriate personnel) after the occurrence of a major event such as earthquake, tornado, volcano eruption, flood, local intense rainfall, or any other unusual event.

3. Technical Evaluation

An evaluation of the existing conditions of the retention system will be made annually (unless changing conditions dictate a shorter period). The evaluation will include an assessment of the hydraulic and hydrologic capacities, water quality, and structural stability and will take into account present and future conditions. Surface and groundwater data will be examined to detect any abnormalities such as seepage.

4. Inspection Report

A report will be prepared by the mill metallurgist to present data from the technical evaluation and from the inspection data accumulated since the last report. These reports will be kept in a file by the mill metallurgist.

5. Inspection Personnel

The mill metallurgist shall be responsible for all inspections and recordings thereof. He shall train and keep contact with any person that may perform inspections (such as a shift foreman). He shall keep all pertinent records and files.

January 26, 1981