**Section 332.70 Technical Analyses**

The technical information shall also include the following analyses needed to demonstrate that the technical criteria of this Part will be met:

a) Analysis of radiological impacts, including all pathways of exposure (i.e., ingestion, inhalation, external exposures) of an individual continuously present at the control boundary, the public and those individuals working at the licensed site, in accordance with Section 332.170 of this Part and 32 Ill. Adm. Code 340.210. The analysis of radiological impacts of the proposed project must include the construction, operation, decontamination, relcamation, stabilization and postclosure periods under both normal and low-frequency severe event conditions (e.g., floods, severe storms, earthquakes, tornadoes, extreme temperatures). In addition, the analysis shall include a description of assumptions and procedures used for determination of the source terms, concentrations and dose-conversion factors. The impact analysis shall also include the following:

1) A determination of the radiological impacts to an individual continuously present at the control boundary;

2) A determination of the health impacts to the public, based on existing population and projected population, for 100 years, within a distance of 80 km;

3) A determination of the health impacts to the public, based on existing population and projected population, for 100 years, within a distance to 5 km;

4) Radiological analyses for a period up to 100 years after the anticipated closure;

5) The radiological impacts on groundwater, estimated for a period of 1,000 years after the beginning of the operation; and

6) Identification and differentiation of the roles performed by the natural site characteristics and design features in isolating the byproduct material from environment. The analysis shall include assessments that show the exposures to humans from the release of radioactivity will not exceed the limits set forth in Section 332.170 of this Part and 32 Ill. Adm. Code 340.

b) Analyses of the protection of individuals during operations shall include assessments for expected exposures due to routine operations and accidents during operation, storage, transfer, transport and disposal of ores, products, byproducts and byproduct material as defined in this Part. The analyses shall include assessments that show that exposures will be controlled to meet the requirements of 32 Ill. Adm. Code 340.210 for individuals in the restricted area, and the requirements of Section 332.170 of this Part and 32 Ill. Adm. Code 340.310 and 340.320 for individuals outside the control boundary.

c) Evaluation of the long-term stability of the byproduct material disposal site and the need for active maintenance after closure of the source material milling facility and any byproduct material surface impoundment or disposal area shall be based upon analyses of active natural processes such as erosion, mass wasting, slope failure, settlement of byproduct material and backfill, infiltration through covers over disposal areas and adjacent soils and surface drainage of the disposal site. The analyses shall include assessments that show that, after closure, the disposal site will not require active maintenance.

d) Analysis of the protection of the disposal site from inadvertent access shall include demonstration that the site closure requirements of Section 332.180 of this Part will be met.

(Source: Amended at 21 Ill. Reg. 3897, effective March 13, 1997)