

Decision to Participate

LTV Steel Mining Company (LTVSMC) recognizes that it must do its part towards achievement of mercury reduction goals. Ore processed at the Hoyt Lakes Taconite Processing Plant contains trace amounts of mercury. Coal burned at the Taconite Harbor Power Plant contains trace amounts of mercury. Some products and devices used at LTVSMC contain mercury. LTVSMC has developed a voluntary reduction strategy to address mercury reduction within LTVSMC, where possible, combined with a focused outreach program to achieve reductions of releases to the environment.

This document is intended to be dynamic and responsive and will accordingly be revised as more is learned about mercury at LTVSMC or adjustments are made to processes or production rates at LTVSMC.

Specific Plans and Objectives

Mercury in the Ore

A Natural Resources Research Institute (NRRI) study (September 1997) included a material balance that indicates that the ore contains 8 to 15 ng Hg/g (i.e. 8 to 15 parts per billion). The study concludes that 90% of this remains with the tailings and does not dissolve in the water of the tailing basin. Based on this study, approximately 42 to 51 pounds of mercury per year is volatilized in the pelletizing furnaces and released to the environment.

There is no known feasible technology that can reduce the amount of mercury reporting to the furnaces or the amount of mercury released from the furnace stacks.

LTVSMC operates twenty-three vertical shaft furnaces to produce taconite pellets. There are wet scrubbers on twelve furnaces and dry collectors on eleven. Based on testing at other facilities, there are indications that wet scrubbers remove more mercury from the air stream than dry collectors do. LTVSMC is committed to upgrading the eleven dry collectors to wet scrubbers.

Voluntary Reduction Action:

LTVSMC will perform stack testing on furnace emissions to verify mercury emissions from furnaces with wet and dry collectors.

LTVSMC will work with the MPCA to verify that mercury remains with the tailings and explore changes in tailings handling operating procedures that will maximize retention of mercury within the tailings.

LTVSMC will perform a mass balance to better understand the fate of mercury within the process and will explore process changes that result in more mercury reporting to tailings (based on verification that mercury reporting to tailings is retained by the tailings).

Specific Plans and Objectives (continued)

Mercury in Coal

LTVSMC routinely samples the amount of mercury in coal burned at the Taconite Harbor power plant and generates reports to the MPCA. Assuming all of this mercury is released via the boiler stacks, approximately 30 to 90 pounds of mercury per year is released to the environment.

There is no known feasible technology that can reduce the amount of mercury released from the boiler stacks.

Voluntary Reduction Action:

LTVSMC will perform stack testing on boiler emissions to verify mercury emissions.

LTVSMC will perform a mass balance (air emissions, fly ash, bottom ash and pyrites) to better understand the fate of mercury within the process.

Mercury in Products and Devices

LTVSMC has had a Mercury Elimination Program in place at the Taconite Harbor Power Plant since 1991. Switches, scales, manometers and flowmeters containing a total of 476 pounds of mercury have been replaced.

LTVSMC has been recycling fluorescent lamps and mercury-containing batteries since 1992.

At the Hoyt Lakes Taconite Processing Plant, free flowing mercury collected from devices (such as switches, scales, manometers and flowmeters) has resulted in removal from the waste stream of 964 pounds of mercury since 1990.

Voluntary Reduction Action:

LTVSMC will develop a more formal Mercury Elimination Program at the Hoyt Lakes Taconite Processing Plant. The program will include an inventory of mercury containing devices, a plan to phase out those devices where feasible and a methodology to avoid introduction of new mercury containing devices or products where mercury free alternatives exist.

Specific Plans and Objectives (continued)

Community Outreach

LTVSMC believes that significant amounts of mercury are released to the environment because the public is unaware of the mercury content of fluorescent lamps, batteries, thermostats, sump pump switches, etc.

Voluntary Reduction Action:

LTVSMC will participate in any joint effort which may be undertaken with other taconite processors and Minnesota Power to develop a Mercury Awareness Program targeted at Northeastern Minnesota and deliver it to the local community via brochures, newspaper advertising and radio advertising. Once the group finalizes the plan, LTVSMC will support a portion of this effort based on a funding strategy developed by the group.

LTVSMC will participate in any joint effort which may be undertaken with other taconite processors and Minnesota Power to develop a Community Mercury Recycling Program targeted at Northeastern Minnesota. Once the group finalizes a plan, LTVSMC will support a portion of this effort based on a funding strategy developed by the group.

Proposed Implementation and Reporting Schedule

Mercury in the Ore:

Stack testing to verify mercury emissions will be done on at least one furnace with a wet and one furnace with a dry collector in 2000. Test results will be submitted to the MPCA as soon as they are available. This effort will be in conjunction with a mass balance.

Measurement of mercury evasion from the tailings basin will be performed in 2000 assuming that the appropriate test equipment is available from the MPCA. Test results will be submitted to the MPCA as soon as they are available.

A mass balance will be performed in 2000. Test results will be submitted to the MPCA as soon as they are available. All or parts of this effort would be repeated if process changes were made that would impact the flow of mercury in LTVSMC's process.

Proposed Implementation and Reporting Schedule (continued)

Mercury in Coal:

Stack testing on boiler emissions to verify mercury emissions will be done on at least one boiler in 2000. Test results will be submitted to the MPCA as soon as they are available. This effort will be in conjunction with a mass balance.

A mass balance (air emissions, fly ash, bottom ash and pyrites) will be performed in 2000. Test results will be submitted to the MPCA as soon as they are available. All or parts of this effort would be repeated if process changes were made that would impact the flow of mercury in LTVSMC's process.

Mercury in Products and Devices:

An inventory of mercury devices installed at the Hoyt Lakes Taconite Processing Plant will be completed in 2000. The inventory will include an assessment of the risk of mercury release for each device. A report will be issued to the MPCA by the end of the first quarter of 2001.

A plan to eliminate mercury-containing devices, where practical substitutes exist, will be submitted by the end of the second quarter of 2001. The plan will be issued to the MPCA by July 31, 2001.

An inventory of mercury products used at the Hoyt Lakes Taconite Processing Plant will be completed in 2000. A report will be issued to the MPCA by the end of the first quarter of 2001.

A plan to reduce the use of (where practical substitutes exist) and/or improve the recycling of mercury containing products will be submitted by the end of the second quarter of 2001. The plan will be issued to the MPCA by July 31, 2001.

Community Outreach:

LTVSMC is prepared to participate with other taconite processing facilities and Minnesota Power in the development and delivery of a Mercury Awareness Program starting in 2000.

LTVSMC is prepared to participate with other taconite processing facilities and Minnesota Power in the development of a Community Mercury Recycling Program starting in 2000.

Progress Measurement

LTVSMC will update the attached LTVSMC Mercury Release Inventory in February of each year starting in January of 2001. The key reporting parameter for emissions from pelletizing furnaces and power plant boilers will be mercury emissions on a pound per ton or pound per MWH, produced respectively.