

Diesel
Emissions
Evaluation
Program

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1995

- American Conference of Governmental Industrial Hygienists (ACGIH) notification of intended change for inhalation exposure:

Diesel exhaust = 0.15 mg/m³

- Analytical method not clear.

Underground status

- Hardrock mining dependent heavily on diesel equipment
 - Mucking and moving ore (heavy duty equipment)
 - Personal transportation (light duty equipment)
 - Number of units increasing rapidly

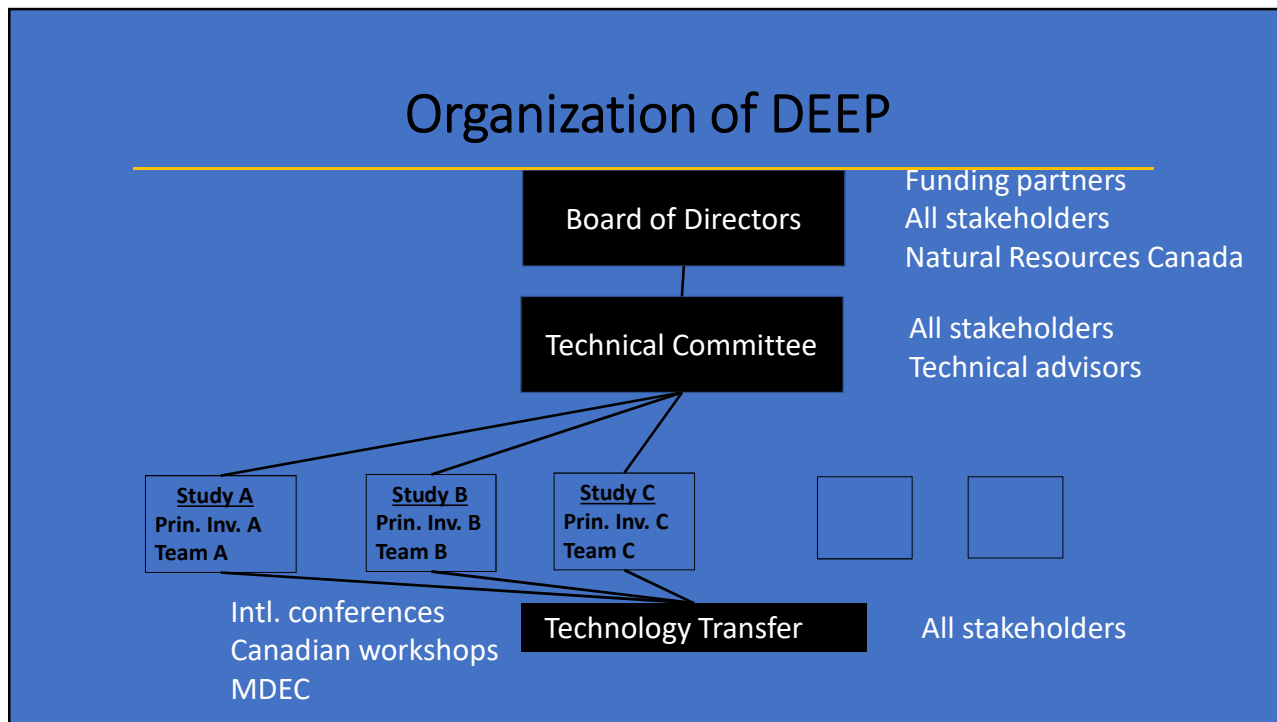
As of 1995 nobody knew how to achieve this proposed Threshold Limit Value.

Continued used of diesels underground is essential

- <> Research needed
- <> Must involve all stakeholders
- <> Should be funded primarily by the mining industry

Program done over 11 years

- <> Analytical methods.
- <> Technology used must be proven in underground operations.
- <> New fuels (e.g., biodiesel?)
- <> Fuel additives for improved filter regeneration.
- <> Improved engine maintenance practices.
- <> Improved electronic engine design.
- <> New generation of particulate filters (metal mesh; glass fiber; ceramics).
- <> Effective regeneration (active and passive).



- ## Funding of \$2.5 million (direct)
- | | |
|---|---|
| <ul style="list-style-type: none"> Barrick Gold Cambior IMC Kalium Hudson Bay Min & Smelt Inco Morton Salt Intl Noranda Placer Dome | <ul style="list-style-type: none"> Rio Rinto Toronto Trans. Comm. Workers Safety & Ins. Board (Ont.) Williams Oper. Corp. Xstrata Fed. Govt (in-kind) CAMIRO (in-kind) |
|---|---|

People made the difference

- Treasury C. Graham (CAMIRO)
- Secretariat Nat. Resources Canada
- Federal govt M.Gangal; D.Dainty; M.Grenier; B.Howell; D.Young
- Provin. Govt Workers Safety & Insurance Board; J.Vergunst
- Unions A.King; D.McGraw; J.Penney; G.Hrytsak
- Mining companies
- U.S. NIOSH G.Schnakenburg; A.Bugarski
- North Amer. Scientists W.Watts; D.Kittelton
- Foreign scientists A.Mayer
- Ventilation engineers J.Stachulak; G.Nault
- Maintenance engineers

People

- Diesel equip. operators
- Electrical and instrument eng.
- Engine manufacturers
- Fuel suppliers
- Control equipment manuf.
- Instrumentation manuf.
- Exhaust emission test personnel

How we worked

<> All proposed projects underwent outside peer review to improve technical and scientific competency.

<> All decisions of both the Board of Directors and Technical Committee were made by consensus.

- This was important.
- But it took time.

Data, data, and more data

Enormous amounts of data were collected by each study and were compiled and analyzed by each study team and outside scientists.

To see details go to:

<https://www.mirarco.org/wp-content/uploads/CAMIRO-Archives/DEEP-Research/>

DEEP was successful because everyone involved, despite some differences in viewpoints, wanted it to succeed.

We can achieve significant things when we work together.