

Wednesday PM

**Paper No. 173 — 16:00**

*The H-W Massive Sulphide Deposit at Buttle Lake, Vancouver Island, B.C.*

R.R. WALKER, Exploration Manager-Vancouver Island, and  
C.A. PEARSON, H-W Geologist, Westmin Resources Limited,  
Campbell River, B.C.

The H-W orebody is being developed by Westmin Resources Limited. Commissioning of this mine in 1985 will triple the property milling rate to 3000 short tons per day. Current H-W reserves total 15,232,000 tons of 0.07 oz Au/T, 1.1 oz Ag/T, 2.2% Cu, 0.3% Pb and 5.3% Zn.

The H-W orebody is a polymetallic, massive sulphide deposit associated with felsic volcanic rocks of the mid-Paleozoic Sicker Group. The ores occur primarily within one, sedimentary lens which averages 65 weight per cent pyrite. This lens exhibits strong, lateral zoning from a cupriferous pyrite core to zinc, copper, lead and barite rich margins. Gold is relatively uniformly distributed in contrast to silver which is enriched in the marginal phase. A large pyrite-quartz stringer zone underlies the orebody.

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**MAINTENANCE/ENGINEERING DIVISION/  
DIVISION DE LA MAINTENANCE ET DU GÉNIE**  
14:00, SOCIAL SUITE EAST (HOTEL VANCOUVER)  
**Diesel Power Generations and Heat Recovery,  
Base-Load and Stand-by**

M.A. PFEIFER, Bechtel Canada Ltd., Toronto, Ontario,  
E.W. MITCHELL, Mining Health and Safety Branch,  
Ontario Ministry of Labour, Toronto, Ontario, Session  
Chairmen

**Paper No. 174 — 14:00**

*Diesel Engines: Mechanical Considerations for Equipment Selection and Operation.*

D.G. CHAMPION, President, D.G. Champion Engineering Ltd.,  
Toronto, Ontario

A comparison of diesel engine power ratings with in-service capability, and the selection of unit size and total number of units are discussed in the paper. Engine specific fuel consumption and its evaluation in relation to manufacturers' tolerances and equipment load factors is reviewed along with the suitable plant layout. The potential for heat recovery is discussed in connection with simple and operable recovery systems for exhaust and cooling circuits. Maintenance standards as related to improved reliability and reduced fuel and operating costs are also outlined.

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**Paper No. 175 — 14:30**

*Diesel Generators: Electrical Considerations for Equipment Selection and Operation.*

F. HAMPSHIRE, Consultant, Walter Dow Associates Ltd., Toronto, Ontario

This paper covers the various criteria which are involved in the selection of electrical equipment for a diesel electric set. Voltage and speed regulators are covered, including the response to suddenly applied loads. Some ideas on protection and grounding are presented and general observations on heat recovery systems discussed briefly.

**Paper No. 176 — 15:00**

*Diesel-Electric Generation and Heat Recovery Operation at Nanisivik Mine.*

C. JENKINS, Power Plant Superintendent, Nanisivik Mines Ltd.,  
Nanisivik, N.W.T.

Nanisivik Mines Limited operates a 10 Mw diesel electric generating plant at its zinc-lead operation on Baffin Island in the Canadian Arctic. This paper provides a description of the plant and the integrated waste heat recovery system. Data is presented detailing the actual costs of operating a plant over a period of seven years.

Problems not amenable to plant operation are described as well as the success of the plant in meeting its objectives over the years. It should be emphasized that material presented has been obtained from knowledge gained under actual operating conditions at the Nanisivik plant.

**Paper No. 177 — 15:30**

*History of Diesel Engine Failures with Recommended Solutions and Maintenance Procedures.*

D. WINN, President, Industrial Diesel Services, Inc., Weston, Ontario

This paper reviews diesel generator failures over a ten-year period with information of solutions, etc. The need for maintenance, maintenance standards, maintenance schedules, availability of spares, preventative maintenance are emphasized. The benefits of good maintenance and operational procedures are also reviewed.

**Paper No. 178 — 16:00**

*The Effect of Oil Selection on Fuel Economy and Wear Performance.*

DON E. RIDDELL, Senior Technical Specialist, Esso Petroleum  
Canada, Edmonton, Alberta

The paper will present the role that oil formulation plays in the lubrication of base-load diesel generators and locomotive engines. Two areas of interest will be detailed, viscometric and additives. The proper viscometric performance has a pronounced impact on over-all unit operability, wear prevention and even fuel economy. Some recent field test data will be discussed to support this claim. The effects of proper additive selection on wear, fuel economy and viscometrics, with some discussion of the mechanics of additive performance will be included.