



Office of the Federal Inspector

Alaska Natural Gas Transportation System

Post Office Building, P.O. Box 290
1200 Pennsylvania Avenue, NW.
Washington, DC 20044

April 16, 1985

D-0025222

Mr. Edwin (A1) Kuhn
Vice President, Government Affairs
Northwest Alaskan Pipeline Company
1120-20th Street, N. W., Suite S-700
Washington, D. C. 20036

Re: Pipeline Design Criteria Manual - Section 13, Design Modes

Dear Mr. Kuhn:

The Office of the Federal Inspector (OFI) and the State of Alaska have completed a review of Revision 4, Section 13, Design Modes, of the Pipeline Design Criteria Manual (DCM) you transmitted on November 21, 1984.

In our letter of February 15, 1984, we conditioned our approval of Revision 3 on submission of the following support documents:

- (1) Thermal Effects Analysis (Formerly, Thaw Mitigation Thermal Analyses);
- (2) Chilled Pipe Effects on Streams; and
- (3) Frost Heave Criteria and Methodology (DCM Appendix 21A).

The above referenced documents have been reviewed by the OFI, and the Pipeline Design Criteria Manual Section 13, Revision 4 is approved.

From the information contained in the Thermal Effects Analysis Report, it is clear that the required degree of control of frost formation/permafrost thaw for the buried modes can be obtained by the use of substantial quantities of combinations of pipe insulation and disturbed area (workpad) insulation. However, if the need for such mitigative efforts is found to be extensive, other solutions may be more cost effective. The economics of using construction modes which require large amounts of pipe insulation and/or workpad insulation should be evaluated during the early engineering effort after remobilization of the project.

Sincerely yours,

John T. Rhett
John T. Rhett
Federal Inspector