

**DEPARTMENT OF
TRANSPORTATION**

Pipeline Safety Operations Office

[Docket No. Pet. 75-13W]

**TRANS-ALASKA CRUDE OIL
PIPELINE**

Grant of Waiver

By letter dated November 24, 1975, the Alyeska Pipeline Service Company (Alyeska) requested a waiver from compliance with the coating and cathodic protection requirements of 49 CFR 195.238(a)(5) and 195.242(a) with respect to thermally insulated piping to be installed at the pump stations and the terminal on the Trans-Alaska crude oil pipeline.

Section 195.238(a)(5) provides: (a) No pipeline system component may be buried unless that component has an external protective coating that—

(5) Supports any supplemental cathodic protection.

Section 195.242(a) provides: (a) A cathodic protection system must be installed for all buried facilities to mitigate corrosion deterioration that might result in structural failure. A test procedure must be developed to determine whether adequate cathodic protection has been achieved.

The piping for which the waiver is sought is to be covered with an inner coating of inorganic zinc or Scotch-kote 202 and an outer coating of thermal insulation material. The outer coating consists of a high density closed-cell polyurethane foam and a vapor barrier sealant inside a rigid polyethylene jacket. This coating system precludes the effective operation of external cathodic protection. The insulation coating is necessary to maintain the temperature of oil in the piping and the temperature of the surrounding refrigerated soil.

Alyeska argues that a waiver is appropriate because the characteristics of the insulation coating and the low moisture content of the refrigerated soil virtually exclude the possibility that corrosion would occur on the piping. Alyeska further points out that these factors were determinative in the grant of waiver to Alyeska dated May 19, 1975 (40 FR 22579) regarding compliance with §§ 195.238(a)(5) and 195.242(a) for 4.3 miles of special, buried refrigerated sections of the pipeline.

In addition, Alyeska submits that the following procedures are to be followed in applying the insulation coating to the piping:

1. All insulation shall be examined upon receipt in the field and prior to application to determine integrity of vapor barrier and jacketing. If any discontinuities or flaws are found, they shall be coated or repaired (in accordance with applicable specifications). If repair is not feasible, they shall be replaced.

2. All joints shall be firmly butted together so that all voids are eliminated. Damaged butt ends or longitudinal faces shall be refitted or discarded. Insulating cement or vapor barrier material shall not be used to fill voids.

3. All circumferential and longitudinal joints shall have the polyethylene jacket sealed with a hot welding system in accordance with the manufacturer's recommendations.

4. When field conditions are such that manufacturer's recommendations for application temperatures cannot be met, or during inclement weather, the Contractor shall provide material and/or substrate heating, shelter, or other measures as necessary to insure [sic] successful application.

5. After sealing of all joints, contractor shall examine all joints or jacketing welds to insure [sic] integrity of jacketing and vapor barrier effectiveness. Examination shall be conducted by means of an electrical holiday detector.

The Materials Transportation Bureau (MTB) has reviewed the information submitted by Alyeska in connection with the requested waiver. Based on that review and other relevant information, MTB finds that a waiver is appropriate and consistent with pipeline safety for the following reasons: (1) the polyethylene jacket is a relatively impermeable barrier to moisture which is necessary for corrosion to occur; (2) in the event of a break in the outer jacket, the possibility of corrosion is minimized by the combination of a vapor barrier, low permeability of the polyurethane foam to water, and the existence of an underlying coating of Scotchkote 202 or inorganic zinc material; (3) if water does penetrate the thermal insulation, the supply of oxygen and its replenishment to support corrosion would be minimal; (4) the very high resistivity of the surrounding soil due to mechanical refrigeration virtually eliminates corrosive action; (5) the application procedures to be followed appear sufficient to insure [sic] the integrity of the

insulation coating; and (6) the location of the piping at pump stations and the terminal facilitates inspection and observation of any leak which might occur.

Accordingly, effective immediately, the Alyeska Pipeline Service Company is hereby granted a waiver from compliance with the coating and cathodic protection requirements of 49 CFR 195.238(a)(5) and 195.242(a) with respect to thermally insulated piping to be installed at the pump stations and the terminal on the Trans-Alaska crude oil pipeline.

(Sec. 6, Pub. L. 89-670, 80 Stat. 937 (49 USC 1655); (18 USC 831-835); 40 FR 43901, 49 CFR 1.53.)

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