Défense nationale National Defence

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DETAILED REPORT: FUEL SPILL-CFS ALERT, 20 MARCH, 2013

INTRODUCTION

1. This report is intended to detail the discovery and follow-up actions taken in response to the 20 March 2013 indoor spill of JP8 (Aviation Fuel) at Canadian Forces Station (CFS) Alert – Stand-By Power Plant Fuel Room. This spill was a result of a cracked plastic sight bowl on the fuel filter assembly located between the fuel storage tank ID# K10701 (EC# 00002535) and the generators.

2. This detailed spill report is submitted as required under the conditions in Part G, Section 4.C of CFS Alert's Nunavut Water Board (NWB) Licence, 3BC-ALT1015 pursuant to the Nunavut Waters and Nunavut Surface Rights Tribunal Act.

3. This spill was reported as required under the Arctic Waters Pollution Prevention Act, Subsection 5(1).

4. This spill was reported as required by the Government of Nunavut's Environmental Protection Act paragraph 5.1(a). The spill was reported to the Northwest Territories/Nunavut (NT/NU) 24-Hour Spill Report Line on 21 March 2013. The spill report reference number is 13-093.

5. This spill was reported in reference to Subsection 41(1) of the Storage Tank Systems For Petroleum Products and Allied Petroleum Products Regulations for the purposes of Paragraph 212 (1) (a) of the Canadian Environmental Protection Act, 1999.

DETAILS

1. Time, date and location of the spill occurrence.

   a. The spill was discovered at 1310 EST, 20 March 2013, by the Power Plant Operator upon investigation of an audible alarm within the Stand-By Power Plant (Building #146; Figure 1). This audible alarm is part of the Oil-Alert Liquid Leak Detector System that was previously installed in summer 2011. The location of

the Stand By Power Plant is: Latitude 82°29'50"N; Longitude 62°20'39"W. A building floor plan is shown in Figure 2 to illustrate the location of the fuel room and the fuel filter assembly.

2. Amount and type of spilled product.

   a. 851 Litres of JP8 (Aviation Fuel) was spilled.

3. Root cause(s) of the spill.

   a. A cracked plastic sight bowl was discovered on the bottom portion of the fuel filter assembly (Figures 3 & 4).

4. Measures taken to contain and clean up the spill site.

   a. Upon discovery of the spill, the Spill Contingency Plan was implemented by the Station Firefighters and responders. The fuel valves connected to the fuel filter assembly were shut-off while the Hazmat Team deployed spill absorbing materials.

   b. Approximately 851 L of JP8 was released and entirely contained within the Building's interior concrete secondary-containment system of trenches (capacity of 17,000L). 849 L of JP8 were recovered from the containment system and pumped into barrels for future use. The residual 2 L were collected using spill absorbent materials and later disposed of by incineration. The entire building was aerated to promote evaporation of fuel residuals. It should be noted that there was no release of product to the outside environment.

5. Recurrence prevention.

   a. This spill occurrence is considered to be an isolated event. Station Staff have replaced the broken plastic sight bowl on the fuel filter assembly.

   b. The Station has ordered eighteen (18) new replacement plastic sight bowls to proactively replace all plastic sight bowls within the Main and Stand-By Power Plants.

   c. Upon investigation, CFS Alert was experiencing significant communication outages at the time of the spill that prevented the Oil-Alert Liquid Leak Detector System from triggering the Station-wide Paging System; the communication system has since been restored.

   d. A Work Order has been requested to add a louder audible alarm to the Oil-Alert Liquid Leak Detector System.

6. Summary.

a. A spill of 851 Litres of Aviation JP8 fuel was discovered on 20 March 2013 at CFS Alert's Stand-By Power Plant. An existing Oil-Alert Liquid Leak Detector System was functioning at the time of the spill. Actions were taken to contain and clean up the spill site. This spill was entirely contained within the building's interior secondary-containment system and no product released to the outdoor environment. The spill was reported to the NT-NU 24-Hour Spill Report Line on 21 March 2013 (Spill# 13-093) by 8 Wing Environmental Management.

b. This isolated spill occurrence was a result of a broken plastic sight bowl on the fuel filter assembly. Proactive actions have been taken to inspect and replace all other plastic sight bowls, and a Work Order has been placed to augment the audible alarm of the existing Oil-Alert Liquid Leak Detector System.

Report compiled by:

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ANNEX A

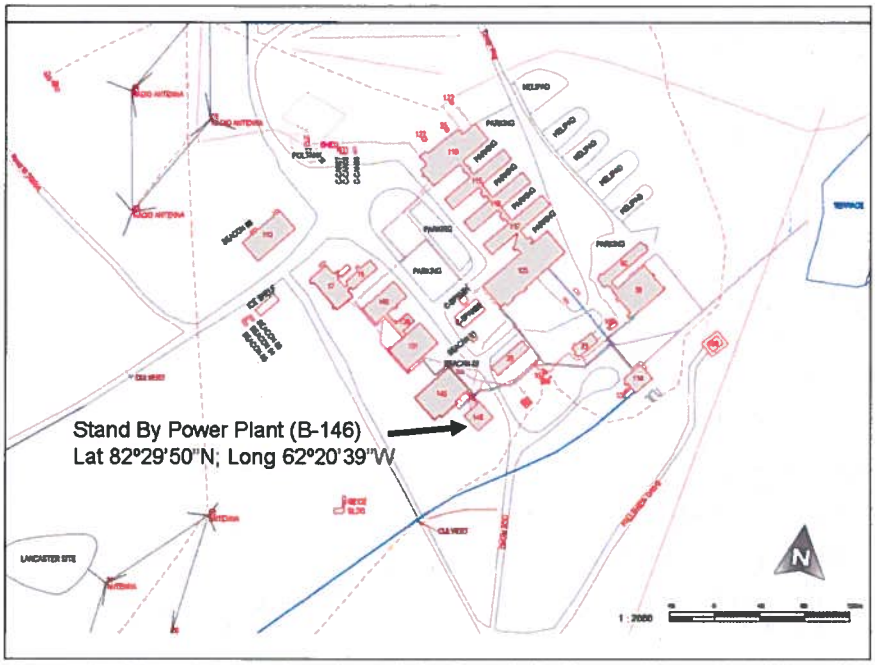

Figure 1 - Map showing location of the Stand-By Power Plant (B-146) at CFS Alert.

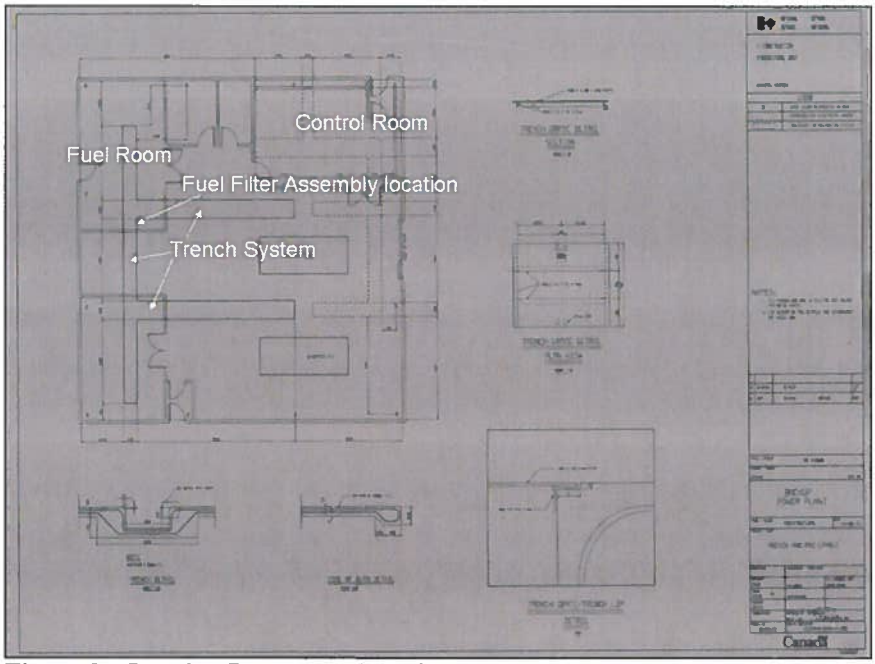

Figure 2 – Interior floor plan of the Stand By Power Plant (B-146) at CFS Alert showing the locations of the fuel room, fuel filter assembly location, and interior trench system.

Figure 3 –Fuel Filter Assembly located in the Fuel Room at the Stand-By Power Plant (B-146).

Figure 4 – Cracked plastic sight bowl from the Fuel Filter Assembly (Brand: Racor).