



Alaska Clean Seas

Training Department
Pouch 340022
Prudhoe Bay, AK 99734-0022



Course Title: Advanced Oil Spill Response in Ice
Date: 31 JAN – 03 FEB 2012
Location: CRREL Facility, Hanover, NH
Length: 4 days

Overview:

Alaska Clean Seas will use the CRREL Facility's outdoor saline test basin for a four-day advanced ice safety and response course, scheduled for 31 JAN – 03 FEB 2012. Monday as a set up day for ACS instructors and CRREL staff; the class days are Tuesday through Friday.

Objectives:

Using a classroom and field practical setting, at the completion of this training, students will be able to

- a) Demonstrate knowledge and proficiency in cold weather spill site safety tactics, ice safety, and realistic cold weather operating limitations
- b) Demonstrate knowledge and proficiency with oil spill response tactics for oil in and under ice
- c) Demonstrate proficiency with spill response equipment including the Rube Witch, underwater light, ice profiling tools, GPS
- d) Integrate Ground Penetrating Radar (GPR) into field delineation activities
- e) Conduct oil spill recovery operations in different ice conditions, including slush ice and broken ice
- f) Plan and execute in-situ burning operations in broken ice

Format:

Classroom: PowerPoint format with lecture and guided discussion presentations.

Field Practical: Hands on Proficiency Checks with ACS equipment in the CRREL outdoor saline ice basin. Practical exercises in spill site safety, site set up, ice profiling, delineation, containment and recovery tactics. Students will use Ground Penetrating Radar, GPS, and underwater lights as part of the delineation exercise.

Level:

Intermediate to Advanced. All attendees should be familiar with response issues and equipment, HAZWOPER, and ICS. Paramount emphasis of this course will be Safety; **ALL** attendees must have and wear appropriate cold weather work clothing, including warm clothes, hard hat, safety glasses or goggles, hearing protection, gloves, warm safety toe boots and traction devices. (Warm winter boots may be substituted for safety-toe boots at the discretion of the Safety Officer.) Students should bring air purifying respirators; the need for using them will be determined by air monitoring and site characterization. PFD's will be required for ice profiling activities until ice thickness and stability has been determined, or as conditions warrant.

Training Aids: ACS Technical Manuals; class handouts; NOAA Sea Ice Job Aids; ICS Forms 201, 214, ACS HSE Tailgate Forms; North Slope Site Safety Plan Forms

Equipment: Rube Witch (chainsaw sled), underwater lights, small portable skimmers and power pack, rope mop skimmer, ice augers, ice profiling electric drill with bits and flights, cold weather field support equipment and heated shelters, handheld GPS units, GPR equipment, in-situ burning igniters, air monitoring equipment



**Alaska Clean Seas
Oil Response in Ice Training Course
Cold Regions Research & Engineering Laboratory (CRREL)
Engineer Research & Development Center (ERDC)
Hanover, NH
Date: 30 JAN – 03 FEB 2012**



Day 0

30 JAN 2012 (at CRREL Facility)

0800	<input type="checkbox"/> Site prep and setup <input type="checkbox"/> Classroom setup <input type="checkbox"/> Snow removal and site clearing <input type="checkbox"/> Move powered equipment to warm storage and perform PMs	Classroom & Field	ACS Training, Operations Support, Mechanic, and CRREL Staff
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Day 1

31 JAN 2012 (at CRREL Facility)

0800	Introductions & Course Objectives <input type="checkbox"/> Course Description, Agenda, Expectations <input type="checkbox"/> Overview of CRREL and ERDC Facilities	Classroom	
0900	<input type="checkbox"/> Sea Ice and Freshwater Ice Characteristics <input type="checkbox"/> NOAA Sea Ice Job Aids	Classroom	Classroom: PowerPoint and handouts
1000	Cold Weather Spill Site Safety <input type="checkbox"/> Site Safety Plan <input type="checkbox"/> Ice Safety and Ice Profiling Field Practical: <input type="checkbox"/> Site Clearing and Setup <input type="checkbox"/> Decontamination Setup <input type="checkbox"/> Warm-Up Area and Warm Storage Setup <input type="checkbox"/> Atmospheric Testing <input type="checkbox"/> Ice Profiling Tactic	Classroom S-2 Tactic: S-4, L-2 S-6 L-2 S-5 L-7	Classroom: PowerPoint and handouts Field: Warm-up shelter setup; site layout and field setup, air monitors, electric drills; Ice augers
1200	Lunch		
1300	Surveillance & Delineation Field Practical: <input type="checkbox"/> Delineation of Oil Under Ice <ul style="list-style-type: none"> ○ Underwater Light ○ Ground Penetrating Radar Survey <input type="checkbox"/> Mapping and Surveillance of a Spill on Land <ul style="list-style-type: none"> ○ Garmin GPSMAP-60 CSx or 76CSx 	Tactic: T-1, T-3 T-2	Field: Handheld GPS, ice augers, underwater light, small generator
1700	Secure		

Day 2**01 FEB 2012 (at CRREL Facility)**

0800	Review of Day 1, Delineation Results; Day 2 Briefing and Field Assignments.	Classroom	
0830	Containment and Recovery Topics <input type="checkbox"/> Review of Tactics	Classroom	Classroom: PowerPoint and handouts
0900	Containment / Recovery Tactics, Oil under Ice (no current) <input type="checkbox"/> Containment Tactics <input type="checkbox"/> Set up Skimmers, Pumps and Tanks for Recovery	Tactic: C-11, C-12 R-13, R-14	Field: Electric drills; ice augers, Rube Witch, skimmers and power packs, pumps, storage tank; decon / warm-up shelter
1200	Lunch		
1300	Containment / Recovery Tactics, Oil under Ice (with current) <input type="checkbox"/> Containment Tactics <input type="checkbox"/> Set up Skimmers, Pumps and Tanks for Recovery <input type="checkbox"/> Deflection using plywood boards	Tactic: C-11, C-12 R-13, R-14	Same
1700	Secure		

Day 3**02 FEB 2012 (at CRREL Facility, classroom and saline test tank)**

0800	Vendor equipment and R&D status updates with guest speakers. Current organizations and topics being considered are not finalized.		<i>This section is open still; vendors and speakers are being contacted. cjh</i>
1200	Lunch		
1300	Vendor Equipment in the Test Tank <input type="checkbox"/> Class to assist and train with new equipment	Tactic:	
1500	Decontaminate and Repack Equipment <input type="checkbox"/> Clean, dry and restore all equipment to warm storage.	Tactic: L-2	
1700	Secure		

Day 4

03 FEB 2012 (at CRREL Facility)

0800	Review of Day 2 and Day 3; Briefing and Field Assignments.	Classroom	
0830	Containment and Recovery in Slush Ice, Forming Ice and Broken Ice <input type="checkbox"/> Skimmers in slush and broken ice <input type="checkbox"/> Burning Tactics for land, ice and broken ice conditions	Classroom R-31 B-3, B-5	Classroom: PowerPoint and handouts
0900	Burning Tactics for Oil in Broken Ice <input type="checkbox"/> Containment in Broken Ice <input type="checkbox"/> Use of Igniters <input type="checkbox"/> Recovery of burn residue	B-3, B-5, B-6	Field: Oil Ignition System
1200	Lunch		
1300	Critiques, Final Comments, End		

Facility Overview

- Training course will utilize classroom and outdoor saline ice basin.
- Tank is 60 x 25 x 7 feet deep with a removable roof and refrigeration system to maintain the ice conditions. CRREL will grow 2 feet of sea ice in the tank. North Slope Crude Oil will be injected under the ice and into the ice as it is forming.
- A rail-mounted gantry runs the length of the tank and can be rigged with pulleys and attachment points to raise and lower skimmers if necessary. Additional rail-mounted work platforms are available if ice becomes unsafe to walk on.
- Deck space at the end of the tank approximately 20 x 25 feet, plus additional clear ground along east side of tank (approximately 80 x 15 feet) that is available for decontamination, WeatherPORT shelters, and equipment lay down area.

Figure 1 on next page: View looking north, with concrete platform at far end of tank, and removable roof rolled out of the way. Proposed layout of 2012 ACS Training Course overlaid on picture. Current plan is to use ½ of the tank area for initial ice cuts. Second half of tank will be used for additional slots or for vendors' equipment as needed.

