AOGA Educational Seminar
December 11, 2012

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President/General Manager
Alaska Oil Spill Removal Organizations

- Certified by the Coast Guard
- Based on equipment, training, and maintenance
- Voluntarily Program
- Periodic Inspections

- 5 Alaska OSROs
  - Alaska Clean Seas (North Slope)
  - CISPRI (Cook Inlet)
  - SEAPRO (Southeast)
  - Alaska Chadux Corporation (Western Alaska/Inland)
  - SERVS (Prince William Sound)
Authority

ACS is a non-profit 501(c)(4), oil spill response cooperative whose current membership includes oil and pipeline companies that engage in or intend to undertake oil and gas exploration, development, production and/or pipeline transport activities on the North Slope of Alaska and in the leased portions of the OCS of the State of Alaska.
Area of Interest

Providing response services to the Alaska North Slope crude oil exploration efforts, producers, the first 167 miles of the Trans Alaska Pipeline System and exploration areas of the OCS of Alaska.
State and Federal Support

Provided ACS can meet member requirements, support State of Alaska, USCG, and EPA led responses – both on shore and off shore – nationally & internationally.

- Deepwater Horizon
- USF&W Polar Bear Recovery
- Milepost 400 Pipeline Shooting
- Coast Guard Search and Rescue
- Coast Guard Law Enforcement Support
- M/V Selandang Ayu (Aleutians)
- M/V New Carissa (Oregon)
- M/V Kure (California)
- M/V Striker Self-Propelled Barge (North Slope)
National/International Cooperation

- Association of Petroleum Industry Cooperative Managers (APICOM)
  - 20 Members
  - Guam, Hawaii, Canada, Central/South America

- Global Response Network (GRN)
  - 9 Members
  - NOFO, OSRL, MSRC, ACS, SERVS, WCMRC, ECRC, CCA, AMOSC
ACS Co-Op Membership

- Alyeska Pipeline Service Company
- Anadarko Petroleum Corporation
- BP Exploration (Alaska) Inc.
- Brooks Range Petroleum Corporation
- ConocoPhillips Alaska Inc.
- Eni U.S. Operating Company Inc.
- ExxonMobil Production Company
- Great Bear
- Pioneer Natural Resources (USA)
- Savant Alaska
- Shell Exploration & Production Company
- Repsol
Manpower

• 84 full-time staff (plus additional contractors), all of whom are available for response operations.

• Average of 170 qualified responders are available on any day through member companies as part of the North Slope Spill Response Team (NSSRT).

• Additional fully trained personnel are available from contract organizations:
  ○ Auxiliary Contract Response Teams (ACRT)
  ○ North Slope Village Response Teams (VRT)
Village Response Team

- Umiaq / UIC management of 20-40 VRT members from eight villages
Equipment Overview

Equipment is owned and/or by the Co-Op and maintained on the North Slope.

- 311,303 feet of boom (58.9 miles), 21,000 ft of which is Fire Boom (4 miles)
- 158 Skimmers (Over 33,000 bbls/hr of derated recovery capacity)
- Eight helitorch aerial ignition systems
- 93 vessels, two 128 barrel & twelve 249 barrel mini-barges
- One 650 barrel barge and over 250 bladders and folding portable tanks
Potential Spill Sources

- Marine Transportation/Operations
- Pipeline & Storage Facilities
- Drilling - Exploratory & Production
- Field Operations
- Miscellaneous Sources
Spill Response Techniques: Mechanical Recovery

- Skimmers & Pumps
- Heavy Equipment
- Vacuum Trucks
- Manual Removal of Oiled Snow
- Snow Melting
Spill Response Techniques: In-Situ Burning

- On Water
  - Fireboom
  - Helitorches
  - Handheld Ignitors
- On Land
  - Weed Burners
Spill Response Techniques: Dispersants

- Shell maintains capability for their offshore projects
- Alyeska SERVS has dispersants and aircraft on contract in Anchorage
- Additional capability available through Global Response Network Members
- ACS does not maintain dispersant response capability
ACS provides all aspects of spill response training to its member companies, contractors, village response teams and government agencies, including:

- Winter & Summer Response Operations
- Marine Response
- Airboat and small boat operations
- Wildlife Hazing, Capture & Stabilization
- Incident Command System - NIMS
- HSE Training
- Waste Handling & Characterization
Specialty Training

Advanced Ice Safety and Response Course
CRREL Facility

Advanced Oil Spill Responder Course
OHMSETT Facility
Drills & Exercises

- Tundra Response Exercises
- Shallow Water Exercises
- Near Shore/Offshore Drills
- Annual Mutual Aid Drills
- Winter Response Drills
- IMT Exercises
Alaska Clean Seas Technical Manuals

- Tactics developed by the Industry/Agency North Slope Spill Response Project Team.
- Referred to in the North Slope Subarea Plan
- Applicable to all operators on the North Slope
- Priority Protection Sites – Developed through the North Slope Sensitive Areas Working Group.
- Available on the ACS website at www.alaskacleanseas.org
- Manuals have been utilized by several OSRO’s and government agencies in development of similar response manuals.
- Manuals developed into two volumes:
  - Tactics Descriptions
  - Map Atlas
Volume 1 - Tactics Descriptions

TACTIC R-13 Cutting Ice Slots for Recovery

**EQUIPMENT AND PERSONNEL**

<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>BASE LOCATION</th>
<th>FUNCTION</th>
<th>PIECES</th>
<th>NO. STAFF/SHIFT</th>
<th>MORE TIME</th>
<th>DEPLOY TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rube-Wheeler Ice Saw</td>
<td>All</td>
<td>Trenching</td>
<td>3</td>
<td>1</td>
<td>1 hr</td>
<td>0.5 hr</td>
</tr>
<tr>
<td>Ice Auger</td>
<td>WGA, SCA, KRU, ACS, Endcott, Alpetra</td>
<td>Recovery hole</td>
<td>1</td>
<td>1</td>
<td>1 hr</td>
<td>0.5 hr</td>
</tr>
<tr>
<td>Rope Map (4-inch)</td>
<td>All</td>
<td>Recovery</td>
<td>1</td>
<td>1</td>
<td>1 hr</td>
<td>0.5 hr</td>
</tr>
<tr>
<td>Westport (10x12)</td>
<td>ACS, WGA, Alpetra</td>
<td>Sheller</td>
<td>1</td>
<td>1</td>
<td>1 hr</td>
<td>0.5 hr</td>
</tr>
<tr>
<td>Diaphragm Pump (3-inch)</td>
<td>All (ACS, MPW, Alpetra Internal)</td>
<td>Recovery</td>
<td>1</td>
<td>1</td>
<td>1 hr</td>
<td>0.5 hr</td>
</tr>
<tr>
<td>Valvoline</td>
<td>ACS</td>
<td>Recovery</td>
<td>1</td>
<td>1</td>
<td>1 hr</td>
<td>0.5 hr</td>
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<tr>
<td>Suction hose (3-inch)</td>
<td>All</td>
<td>Recovery</td>
<td>1</td>
<td>2</td>
<td>2 hr</td>
<td>0.5 hr</td>
</tr>
<tr>
<td>Discharge hose (3-inch)</td>
<td>All</td>
<td>Recovery</td>
<td>1</td>
<td>2</td>
<td>2 hr</td>
<td>0.5 hr</td>
</tr>
<tr>
<td>Generator</td>
<td>All</td>
<td>Recovery</td>
<td>1</td>
<td>1</td>
<td>1 hr</td>
<td>0.5 hr</td>
</tr>
<tr>
<td>4-Wheel s/s/flow</td>
<td>All, except Belay &amp; MPU</td>
<td>Belaying</td>
<td>2</td>
<td>2</td>
<td>1 hr</td>
<td>0.5 hr</td>
</tr>
</tbody>
</table>

**TOTAL STAFF FOR SETUP AND TRENCHING**

12

**SUPPORT**

- **EQUIPMENT**
  - **FUNCTION**
  - **PIECES**
  - **NO. STAFF/SHIFT**
  - **MORE TIME**
  - **DEPLOY TIME**

- **CAPACITIES FOR PLANNING**
  - 62 blthr manpaks
  - 114 blthr manpaks

**DEPLOYMENT CONSIDERATIONS AND LIMITATIONS**

- Check ice thickness for safe bearing capacity before working on ice. The ice must be sufficiently strong to support personnel and heavy equipment. See TACTIC L-7 for realistic maximum operating limits (RMCs) for ice thickness and temperature. Also, ensure ice can withstand extra load of oil and snow on the surface without either breaking the ice or lifting oil to migrate through existing cracks. Extra care must be taken when positioning or operating any heavy equipment close to branches or slots in the ice. Stakes in the ice for a given load can double under these situations. Ensure that all oil accumulates in an ice trench is continually removed. If allowed to build up to a thick layer, some oil may escape the ice slot.

- In-ice trenches do not extend through the ice and contain spills flowing over the ice surface. "Through-ice" or slots of branches passing through ice is not feasible to contain spills moving under the ice.

- Ice trenches can be configured in "U" shapes or herringbone patterns to contain oil. Remove cut ice blocks in 1-cubic-ft pieces and plans or site opposite oil. The width of the trench should not exceed 4 ft.

- Use of Rube Wheeler chain saw is labor-intensive.

- Use of heat will make the rope map and pump more effective.
Research and Development

• Acts as facilitator for R &D related to spill response in arctic conditions.

• ACS has maintained an active oil spill R&D program since the early 1980s

• The R&D program focuses on areas such as:
  • oil spill recovery techniques in, on, and under ice, during various broken ice conditions,
  • detection and tracking of oil under ice
  • in-situ burning techniques
Ground Penetrating Radar

Viscous Oil Pumping

In-Situ Burning

Oil Weathering

Mechanical Recovery of Oil in Ice

Remote Sensing

Dispersants in Cold Water
R & D 2012 Projects

- Airborne Ground Penetrating Radar – Dave Dickens and Boise State University
- Nuclear Magnetic Resonance for Detection of oil under ice - ExxonMobil
- Arctic Task Force Joint Industry Project – OGP (Technology Review and research needs for oil spills in ice and cold environments)
- Robust Fire Boom - BP
- Integrating Response Data
Wildlife Response Preparedness

- **Equipment**
  - Bird Stabilization Center
  - Bear Capture and Stabilization Kit including cage
  - Wildlife (Bird) Kits (Capture 10, Hazing 15)
  - Net Launchers (4)
  - Bird Scare Devices (67) (Propane Cannons and Breco Scare Buoys)
  - Shotguns for hazing and protection (19)

- **Training**
  - Bird Capture and Stabilization by International Bird Rescue
  - Bird Hazing by Dept of Agriculture
  - Bear Hazing by ACS approved by USF&W
  - Oiled Pinniped Stabilization Training by Alaska SeaLife Center
Training and Response Permits

- ADNR Land Use
- ADNR Title 16 Fish Habitat
- ADNR Bird Hazing
- ADNR Mammal Hazing and Mammal Stabilization, Transport & Disposal
- USF&W Capture, Salvage and Rehabilitation of Migratory Birds & Raptures
- BLM Oil Spill Response Training in NPR-A
- Partnership with USF&W for ANWR
Wildlife Encounters
Polar Bear Cub Incident

Musk Ox Capture
Marine Mammal Response Workgroup

- Informal Working Group formed in 2010 and facilitated by ACS
- Mission is to enhance communications, identify and improve capabilities, and develop/improve procedures with organizations responsible for marine mammal response on the North Slope of Alaska
- Participants include: U.S. Fish and Wildlife, NOAA National Marine Fisheries, Alaska Department of Environmental Conservation, North Slope Borough, Alaska Sealife Center, Alaska Zoo, Pet Stop, Alaska Clean Seas, Alaska Chadux, and ACS member company representatives
Oiled Pinniped Training

Polar Bear Hide Oiling Experiment

Polar Bear Activity at Alaska Zoo
Outer Continental Shelf

- Shell - 12 ACS Personnel Supporting OCS 2012 Operations
- Statoil – Potential member and activity anticipated in 2015
ACS 2013 Outlook

- $8-10 Million Dollar Infrastructure Renewal (Deadhorse)
- Vessel Recapitalization Program
- Increased Member Activity
  - Exxon Point Thompson
  - ConocoPhillips NPR-A Expansion
  - Great Bear
  - OCS (Shell, ConocoPhillips, Statoil)
  - New Members?