PRINCE WILLIAM SOUND
SUBAREA CONTINGENCY PLAN

SCENARIOS
SECTION

SCENARIOS: PART ONE - COASTAL OIL

A. WORST CASE

Event Description: A 265,000 DWT tanker experiences a steering failure. Due to heavy weather, the escort vessels were unable to attach a towing line or control the movements of the vessel. The tanker goes aground on the eastern tip of Naked Island. Over the next five days, the vessel breaks apart on the rocks causing a total loss of fuel and cargo into Prince William Sound.

Location: Latitude 60E 39.6'N, Longitude 147E 18.5'W. Naked Island is 6.5 miles to the west of the Traffic Separation Scheme.

Spill: 92.4 million gallons of Alaska North Slope Crude (ANSC), and approximately over 500,000 gallons of bunker C fuel oil. This is a TAPS trade vessel that loaded cargo at the Alyeska Marine Terminal in Valdez.

Cargo Salvage: Over a five-day period the hull was totally compromised with the entire contents released. Spill response and salvage options were negated by on-scene weather conditions. Lightering barges will be used when conditions permit for removal of residual cargo and fuel. Boom will also be deployed around the vessel when weather conditions permit.

Time of Year: November

On-Scene Weather: NE winds at 40 knots. Sea state 10-15 feet. Air temperature - 38° F.

Discussion: The Captain of the Port, Prince William Sound has set operational restrictions on TAPS trade vessels transiting PWS. Under Federal Regulations 33 CFR 165.1704 vessels transiting in the VTS Special Area are limited to a speed of 12 knots except between Middle Rock and Potato Point where the speed limit shall be 6 knots for laden vessels. A Vessel Escort Response Plan (VERP) developed by the shippers has been accepted by the Coast Guard as meeting the federal regulations for escort vessel selection and informing the master of the performance capabilities as set forth in 33 CFR 168. Under the VERP, tanker speeds have been further defined within the VTS Special Area. Laden vessels are restricted to 6 knots in the Valdez Narrows, 10 knots in the Valdez Arm, 8 knots between Rocky Point and Buoy #9, and 12 knots in the Central Sound. When under ice escort, the vessel speeds are limited to "safe speed" in accordance with Section 7 of the VERP, Revision 1 (2004). Weather restrictions for laden tankers in the Valdez Narrows are winds equal to or greater than 20 knots for 150,000 DWT vessels and 30 knots for all others. Weather restrictions for laden tankers at Hinchinbrook Entrance are winds equal to or greater than 45 knots and/or seas of 15 feet or greater.

The State of Alaska requires that an Escort Vessel and Response Tug escort each laden tanker from the Alyeska Marine Terminal through Hinchinbrook Entrance. The Ship Escort/Response Vessel System (SERVS) also restricts tanker transits if the winds are equal to or greater than 40 knots in Prince William Sound. The maximum transit speed is 10 knots throughout Prince William Sound, except for the Valdez Narrows where the maximum speed is 5 knots. Lower speed limits may be requested by the tanker or escort vessels when ice is detected in the traffic lane.

The Oil Pollution Act of 1990 (OPA 90) requires oil spill response equipment to be pre-positioned throughout Prince William Sound. For additional information refer to 33 CFR Part 155 Subpart E. SERVS

provides this equipment and responds to oil spills involving TAPS trade tankers. Major response equipment including fully equipped response barges and Emergency Response Vessels are located at Cape Hinchinbrook, Naked Island, and Port Valdez. A spill of this magnitude would warrant the activation of the Spills of National Significance (SONS) organization. Refer to the Unified Plan (Annex B, Appendix III) for a description of the SONS organization. Additionally, a spill of this magnitude could also result in a Presidential and gubernatorial disaster declaration.

Initial Action Description:

- Initial call taken by Vessel Traffic Center (VTC), the **Notification of a Spill Incident** form is completed

- Immediate notification of Captain of the Port, Prince William Sound, and the necessary federal/state/local agency notifications are made based on the Emergency Notification List

- State Type 1 Spill Response Team activated. ADEC Type 1 Plan for PWS implemented along with the AIMS Guide.

- Determine if the spill response is categorically excluded under the national programmatic agreement to protect historic properties, and if not, activate an FOSC Historic Properties Specialist.

- Begin consultation with NMFS on threatened and endangered species and their critical habitats.

Weather permitting; the following actions will also occur:

- Immediate call-out of all SERVS response equipment to the site of the discharge. Emergency response vessel with additional response barge obtained with the tug from its mooring station near Naked Island and on scene within an hour.

- Request immediate air support from Air Station Kodiak, AK to conduct overflights pending evacuation of crew. Coast Guard Cutter (CGC) SYCAMORE, out of Cordova, requested to provide initial on-scene platform.

- Incident Command System activated, and Unified Command formed. Command Post established at Valdez Emergency Operations Center (VEOC).

- The Unified Plan and PWS Subarea Contingency Plan are activated. The Geographic Response Strategies in the downstream trajectory are reviewed and resource requirements assessed.

- Commence activation of personnel movement.

- COTP closes Traffic Separation Scheme to all vessels and established Safety Zone around vessel.

- Coast Guard declares the incident a Spill of National Significance. ADEC activates the Crisis Management Team.

- USCG drafts POLREP One. ADEC drafts and releases initial SITREP.

- USCG issues Letter of Federal Interest. ADEC issues Notice of State Interest in a Pollution Incident.

- Issue Letter of Designation.

- Withhold Customs Clearance pending receipt of surety bond, or letter of undertaking.

- State of Alaska alerts response action contractors for possible activation.

Initial On-Scene Investigation/Inspection Evaluation and Recommendations:

- Develop information from overflights, crew reports, spill size, utilize video recording as much as possible to document scene and develop initial response strategy.

- Have investigation team immediately conduct drug testing of the vessel's crew and conduct interviews to determine cause.

- Determine cargo and fuel capacities.

- Collect charts and log books for evidence.

- Determine cargo salvage options and lightering potential.

Initial Response Actions:

- Ascertain the personnel safety hazards.

- Activate response structure including the Alaska RRT, DRG, DRAT, PIAT, MLCPAC contracting team, NPFC team, National Strike Force, Spill of National Significance Team, Regional Stakeholder Committee (RSC), State of Alaska Type 1 Spill Response Team, and State Crisis Management Team.

- Contact FAA to restrict air space.

- Prepare initial press release.

- Request local government support and input through the RSC.

- Complete dispersant checklist (see Unified Plan, Annex F, Appendix I) and consider use of dispersants through direct consultation with the ARRT.

- Complete in situ burning checklist (see Unified Plan, Annex F, Appendix II) and consult with ARRT for potential use.

- Conduct overflights of spill, prepare spill trajectory and obtain weather forecasts.

- Review Geographic Response Strategies for the immediate area and downstream spill trajectory areas.

- Consult with natural resource trustees on the protection of sensitive areas and resources and on potential response options.

- If threatened or endangered species or their critical habitat areas are present, continue consultation with NMFS representatives in accordance with the Oil Spill Response section of the ESA MOA.

Containment Countermeasures and Cleanup Strategies:

- The Unified Command will coordinate and develop an Incident Action Plan to:

- Conduct initial containment.

- Protect sensitive areas with deflection boom

- Deploy recovery equipment as weather permits.

- Coordinate response and field-related natural resource damage assessment activities with the natural resource trustee Natural Resource Damage Assessment Liaison.

- Establish staging areas.

- Arrange for proper transportation, communications, and vessel and ground support.

- Arrange for proper waste disposal (decanting, segregation, liquid and solid waste) and acquire required permits.

- Initiate migratory bird and sea otter capture and rehabilitation program.

- Deploy Shoreline Cleanup Assessment Teams.

- Continue working with NMFS representatives on appropriate actions to be taken in accordance with the ESA MOA.

Resource Requirements:

- Quick deployment of high volume oil recovery vessels and other mechanical collection equipment is essential to the successful response and spill damage mitigation. Obviously a spill of this size would require all area response equipment in a joint coordinated cleanup effort. SERVS is the primary responder for TAPS trade vessels in Prince William Sound (for complete lists of their equipment refer to the Prince William Sound Tanker Spill Prevention and Response Plan). Cook Inlet Spill Prevention and Response, Incorporated (CISPRI), Chadux and ACS are the secondary responders in Prince William Sound. All responders have highly organized coordinated management teams knowledgeable in the ICS structure and area familiarity. A communications network is already in place and ready for immediate usage.

- The magnitude of this spill would cause it to transcend beyond the Prince William Sound area. Similar to the 1989 Exxon Valdez oil spill, predominant ocean currents and weather conditions would move the oil towards the southwest, threatening the Kenai Peninsula, Kodiak and surrounding areas. CISPRI resources would more than likely be committed to cleanup and shoreline protection operations in their area of operation (primarily Cook Inlet). A response barge is available at Seldovia for nearshore collection of product. The Captain of the Port, Western Alaska would likewise be heavily involved in overseeing product recovery and cleanup operations in his/her area of operation.

- Personnel: Initial personnel activation may take some time. This area, unlike much of the country, does however have a substantial cadre of Hazwoper-trained individuals to man cleanup vessels and a large contingent of Hazwoper-trained crews to man fishing vessels for spill response. SERVS has spent considerable time in training fishing vessel crews and primary response personnel during Hazwoper training and field deployment exercises.

B. MAXIMUM MOST PROBABLE CASE

The maximum most probable case is determined by the largest recorded oil spill to date in Prince William Sound. The largest to date was the Exxon Valdez. Due to the large size of this spill, the response actions for the maximum most probable and the worst case scenarios will not differ.

C. AVERAGE MOST PROBABLE CASE (2 Examples)

Introduction: The AMP case(s) for the PWS area likely would be either a "spill due to transfer operations failure" or a "spill due to a fishing vessel sinking, grounding, or other." Several of the response actions outlined in the worst case scenario would remain the same. Representatives of the USCG and ADEC will likely coordinate cleanup efforts onsite. The need for out-of-region response equipment, the activation of a UC or a JIC, and the deployment of federal and state resources are unlikely in this scenario. Notifications would remain the same to keep all concerned stakeholders and resource agencies informed of the incident.

NOTE: The two scenarios are described below; followed by the "Scope of Activities" (shown once since applies to both – realize that of course these are strictly examples/guides to handling an AMP case; as no two scenarios are the same. Thus, the response should be individualized to the specific incident at hand.

AMP Case Scenario # 1 (Transfer Hose Failure):

Event Description: While transferring product at the Valdez Petroleum Terminal (VPT) to a tank barge, the cargo transfer hose fails, causing a loss of product. The spill is not immediately detected. Cargo shutdown is initiated after the spill is detected.

Location: Latitude 61-07.5EN, Longitude 146-21.0EW. VPT is located on the northeast side of Port Valdez just east of the Valdez City Dock.

Spill: 1050 gallons of diesel fuel. Diesel contained by pre-deployed boom around vessel.

Cargo Salvage: There is no damage to the barge. The transfer hose is removed for inspection by USCG and ADEC investigators. Cargo transfer operations will resume pending satisfactory cleanup and satisfactory testing of newly installed transfer hose.

Time of Year: June

On-Scene Weather: SW winds at 10 knots, sea state 1-2 feet, air temperature 60E F.

Discussion: The Captain of the Port, Prince William Sound requires pre-booming of all vessels transferring at the Valdez Container Terminal and the Alyeska Marine Terminal. The VPT voluntarily pre-booms all vessels transferring at its facility.

OPA 90 requires all facilities to have and maintain or contract for response equipment to respond to their worst case discharge. For more information on this requirement refer to 33 CFR Part 154.

AMP Case Scenario # 2 (Commercial Fishing Vessel Grounding/Sinking):

Event Description: This example is based from an actual case. A 65-foot steel hulled fishing tender returning to Cordova, after taking 150,000 pounds of salmon on board, when it ran aground. Initially the vessel was secured to the shore with lines and was surrounded by containment and sorbent boom. However, when the vessel orientation shifted during recovery operations, small bubbles of oil were occasionally released causing a light sheen which was collected by sorbent material. No sheen was observed outside the boom. Dive surveys were conducted to assess the condition of the vessel, along with the ocean bottom on which the vessel rests. Based on these surveys, the OSRO/Salvage agencies contracted by the RP determined the safest option for removing the fuel was to conduct lightering operations; while the vessel remained at its current location.

Location: Northeast point of Spike Island, right outside Cordova Harbor.

Spill: Approximately 605 gallons of fuel was spilled or unaccounted for. Vessel had approximately 1,500 gallons of diesel fuel, 300 gallons of hydraulic oil and 100 gallons of lube oil on board. Lightering operations were conducted, which removed an estimated 1,295 gallons of fuel / oil product off vessel.

Cargo Salvage: The recovery operations were complicated because the vessel is sitting on rocky ledge and the heavy load of fish on board was causing the vessel to slide toward deeper water. On Sep 1, a large 60inch diameter diesel powered macerating trash pump successfully pumped approximately 75,000 lbs of pink salmon form the hold of the vessel. Another 75,000 lbs of pink salmon were removed on Sep 2nd. The large macerating pump produced a pink slurry that was discharged deep underwater just offshore from the recovery operations. While fish were being removed from the vessel, the fish

hold hatch covers were modified to provide additional lift to the vessel. Salvage operations were successful and vessel was refloated and then towed into Cordova.

Time of Year: August – September

On-Scene Weather: Variable sea state, winds, temperatures, and visibility (through-out response)

Vessel Particulars:

Vessel Service: Commercial Fishing Vessel
Length / Weight: 65.5-foot / 104 GRT
Stats: Built - 1970, Self-propelled, Hull-Steel
U.S. Documented: Yes (Valid)

Sensitive Areas at Risk: The area of incident is a favorite local halibut hole. Impacts would be to fishing, sea otters, aesthetics, birds, Ferry System and Vessel traffic in Cordova Harbor area and be of high visibility (media concern). There were no reported impacts to wildlife.

Scope of Activities:

1. Notification

- Initial call taken by USCG Vessel Traffic Center /completion of Spill Incident Form
- Immediate notification of CG duty personnel and COTP-PWS
- CG duty personnel makes the necessary notifications (Federal, State, Local, etc.) based on the Emergency Notification List (See Response Section, Part One)

2. Response Activation

- FOSC/SOSC/RP Representatives establish direct communications
- Ensure that responsible party (RP) is notified and willing / able to respond
- Ensure health and safety of all responders (appropriate PPE worn, etc.)
- USCG duty personnel along with ADEC personnel dispatched to the scene at the first opportunity; to investigate cause, determine what response actions have occurred or are underway
- Establish Safety Zone around spill area, and issue Broadcast Notice to Mariners
- Evaluate slick size, direction, area of coverage, proximity to shore, wildlife impacts, wildlife observed in area, on-scene weather, etc.
- Ascertain if aerial over-flights are warranted
- USCG issue Notice of Federal Interest and ADEC issue Notice of State Interest to RP
- Consult with affected natural resource trustees on resources at risk and proposed response actions that may affect trust resources, including consultation on wildlife response and threatened and endangered species and their critical habitats.

- Determine if the spill response is categorically excluded under the national programmatic agreement to protect historic properties, and if not, activate an FOSC's Historic Properties Specialist.
- If threatened or endangered species or their critical habitats are present, continue consultation with NMFS representatives in accordance with the Oil Spill Response section of the ESA MOA.
- Draft POLREP (USCG) and SITREP (ADEC) and distribute accordingly
- Consider consulting with PIO for press release; if warranted

3. Initiate Response Actions

- Ascertain the personnel safety hazards and evacuate personnel, if required
- Activate the response structure to the level deemed necessary
- Determine proper cleanup being conducted by RP
- Evaluate the capability of RP to carry out an appropriate response given the situation, for securing the source, and preparation of a Site Safety Plan
- Determine feasibility of removal actions based on:
- Will removal actions cause more damage to the environment than allowing the pollutant to naturally dissipate?
- Can cleanup be initiated before the pollutant disperses, making cleanup impractical?
    - Can equipment be deployed without excessive risk to the life and health of personnel?

4. Spill Response Organization

- Establish command structure as described in Unified Plan, Vol. I ANNEX B. Include FOSC / SOSC / RP representatives. The group will always strive to reach consensus decisions. Only when the group has reached an impasse and the timeliness of the situation requires action will the FOSC make unilateral decisions.

5. Containment, Countermeasures, and Cleanup Strategies

- Secure or isolate the source of spill
- Initiate containment and recovery of spilled material
- Consider double booming of initial containment
- Consider protecting sensitive areas with boom in coordination with resource agencies
- Deployment of recovery equipment supplied by RP or contractor
- Arrange for communications and transportation
- Initiate spill tracking
- Arrange for proper waste disposal and cleanup termination

6. Resource Availability and Resource Procurement

No problems anticipated. Resources on hand expected to be adequate. Procuring the resources identified in this spill response is the RP's responsibility. A spill of this volume would not unduly burden the RP since the necessary resources to respond to this spill should be on hand / or contracted out.

7. Shortfalls

- ***Equipment / Personnel***: No shortfall anticipated.
- ***Funding***: Funds availability and access should pose no problem regardless of the financial capabilities of the RP. If funding problems arise, the FOSC has access to the OSLTF and procedures are in place to make these funds available (if the RP is not handling the situation adequately, etc.). Also, the USCG may facilitate opening the fund to be used for the issuing of orders for folks like the Strike Team, DRAT, aerial over-flights, or transport of CG personnel to remote areas, etc.
- ***Minimum Response Times***: Response should be initiated immediately, unless due to extreme weather conditions, etc.

SCENARIOS: PART TWO - HAZMAT

A. COASTAL SCENARIO: WORST CASE

Event Description: Due to the lack of vessel traffic transporting Hazardous Materials within the PWS AOR; the scenario describe here relates to a release of Anhydrous Ammonia (NH3) from Silver Bay Seafoods Cannery located at 219 S. Harbor Drive alongside of the Valdez Harbor, Valdez, Alaska.

Location: Latitude: 61° 7' 29.00" N Longitude: 146° 20' 45.53" W

Released Amount: 7,380 lbs (Reportable Quantity (RQ) is 100 lbs)

Released Description: Model assumptions – Used worst case atmospheric conditions with a light wind blowing into town and low humidity. Warm ambient air temperature causes higher internal tank pressures. Tank rupture is caused by a large fork lift puncture through the tank wall. The puncture hole is 8" x 3" and located 3 feet from tank bottom.

Time of Year: May 2, 2014 @ 0930 hrs (Canneries starting to fire up operations)

On-Scene Weather: Winds from the SE at 5 knots. Air Temperature: 55°F. Relative Humidity: 25%. Cloud Cover: 3 tenths.

See Model charts for Toxic / Flammable Threat Zones

Note: Graciously modeled by: Mr. John Engles, ADEC – Using ALOHA Version 5.4.4 – ESRI ArcGIS 10.2 for Desktop)

***Toxic Threat Zone*: Covers a large area of the Valdez Harbor (includes vessels, fueling station, businesses, and residential properties of Valdez).

***Flammable Threat Zone*: Covers a smaller distance but concentrated vapors over fueling dock and a third of the Valdez Harbor, to include local businesses.

Discussion: The primary goal of this response effort is to evaluate the dangers associated with responding to the event with the Valdez Fire Department Level A Hazmat Team, eliminating the potential for impacting Valdez residents, businesses, harbor and sensitive environments.

Initial Action Description:

- Initial call taken by either Coast Guard MSU Valdez personnel, ADEC, or notified via NRC Report received).
- Immediate notification of Captain of the Port, Prince William Sound, and the necessary federal/state/local agency notifications are made based on the Emergency Notification List.
- Valdez Fire Department/Hazmat Team notified
- State Type 1 Spill Response Team activated (initiated by ADEC)

- Commence activation of personnel movement. Initiate ICS-201.
- Incident Command System activated (Unified Command formed).
- COTP establishes Safety Zone around facility.
- USCG drafts POLREP One. ADEC drafts and releases initial SITREP.
- USCG issues Notice of Federal Interest.
- ADEC issues Notice of State Interest in a Pollution Incident.
- Issue Letter of Designation.
- Determine if the spill response is categorically excluded under the national programmatic agreement to protect historic properties, and if not, activate an FOSC Historic Properties Specialist.

Initial On-Scene Investigation/Inspection Evaluation and Recommendations:

- Develop information from Responsible Party, witnesses, ADEC, etc. on amount released, causal factors, resources at risk, etc.
- Determine evacuation zone and aid in enforcement of.
- Determine total amount of Anhydrous Ammonia stored at facility.
- Collect any equipment/training records for evidence.
- Determine response and clean-up operations.

Initial Response Actions:

- Ascertain the personnel safety hazards.
- Consider establishing a safety zone around facility, and moving any personnel, vessels out of the area.
- Activate response structure including the State of Alaska Type 1 Spill Response Team, the Valdez Fire Department/Hazmat Team, and the Statewide Hazmat Response Team.
- Contact FAA to restrict air space (if necessary)
- Prepare initial press release.
- Request local government support and input through the RSC.

Containment, Countermeasures and Cleanup Strategies:

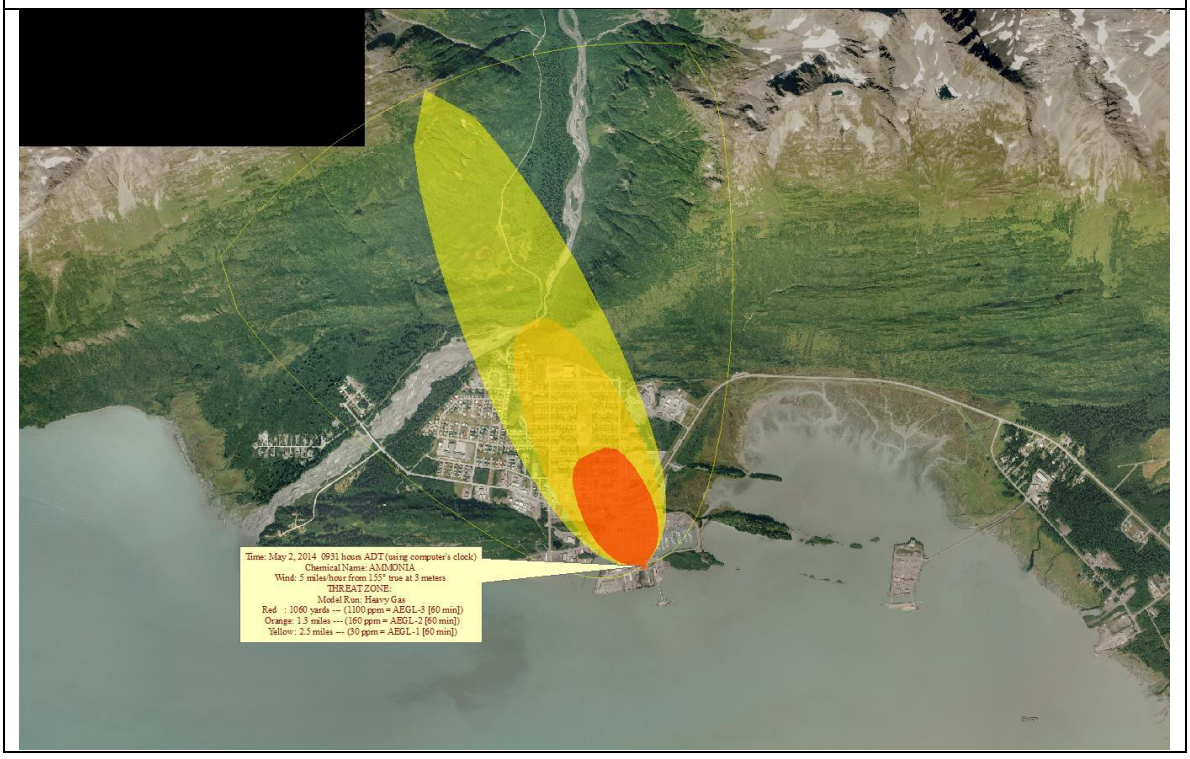
The Unified Command will coordinate and develop an Incident Action Plan to:

- Conduct initial containment / secure source (if warranted)
- Establish staging areas.
- Arrange for proper transportation, communications, ground support (and vessel support for safety zone patrol)

Resource Requirements:

- The initial response will be made by the Valdez Fire Department/Hazmat Team. Additional support may be needed from the Statewide Hazmat Response Team and may also call on the USCG Pacific Strike Team. A spill response kit designed specifically for Anhydrous Ammonia may be obtained from a local contractor.

TOXIC THREAT ZONE



FLAMMABLE THREAT ZONE

B. INLAND SCENARIO: MAXIMUM MOST PROBABLE CASE

Event Description: A series of valve failures at a fish processing facility caused a release of anhydrous ammonia.

Location: Within a fish processing facility, Valdez, Alaska.

Spill Size: Approximately 9000 pounds of anhydrous ammonia was released to the atmosphere after spilling to the ground surface.

Spill Description: During a routine maintenance shut-down, a series of valve failures was noticed by contractors, which caused the release of the entire refrigeration system of 9000 pounds of anhydrous ammonia, over a period of about one hour. Most of the spilled ammonia was contained within the facility, until the maintenance crew began to evacuate the buildings. Vapor clouds of the previously pressurized ammonia sank to the floor, and as the vapor warmed, it began to rise and form a plume approximately 500 yards in diameter.

Time of Year: September

On-Scene Weather: Temperatures ranging from the mid 50's during day light hours and near freezing at night. Wind is from the southwest at approximately 3 knots.

Discussion: In this case, the primary objective of the first responders to this incident is to initiate the public notification process to facilitate an orderly evacuation. The evacuation radius for a spill of this size is about □ mile, which would include a significant portion of the population of Valdez.

Initial Action Description: Construction workers in the vicinity of the leak initially complained of a burning sensation in their eyes and throat, and promptly left the building when they heard alarms sounding throughout the facility. A facility evacuation then proceeded. Notification of the spill was made to the National Response Center, the Alaska Department of Conservation and the Valdez Fire Station. Upon receiving notification, the ADEC State On-Scene Coordinator activates the Incident Command System organization per the provisions of the Unified Plan, Annex B. The operators of the facility assume responsibility of the spill and coordinate evacuation efforts with local authorities. The Valdez Level A Hazmat Team is also activated and prepares to enter the area to secure the source of the release. The ADEC SOSC also places the Statewide Hazmat Response Team on alert for possible activation. Federal and State natural resource trustees were also notified.

Agency ICS Activation: Federal and State involvement in this incident will most likely be to oversee and insure that citizens are evacuated or sheltered in-place where necessary.

Initial On-Scene Investigation / Inspection Evaluation and Recommendations: Due to the magnitude of the spill and the lack of facility capabilities, evacuation of the facility, the city dock (a popular public use facility), and surrounding area is recommended.

Initial Response Actions: Initial response to this incident includes emergency notification and evacuation, plus emergency entry and source control, if possible, by the Valdez Level a Hazmat Team. COTP issues Notice to Mariners to alert the State ferry, fishing vessels, and recreational boaters to the hazard. The fish processing facility is located at the Valdez City Dock and is adjacent to the new Alaska Marine Highway System (AMHS) Ferry Terminal.

Containment Countermeasures and Cleanup Strategies: Due to the transient nature of the ammonia, containment and cleanup operations may not apply. However, the facility may have plans to aid in the dissipation of the gas by venting, displacement via an inert gas, or both.

Resource Requirements: Immediate notification is essential in this incident to avoid exposure of individuals to dangerous concentrations of ammonia. Workers exposed to the gas may require decontamination prior to transport to the hospital. Like most hospitals in Alaska, the Valdez hospital is small and not equipped for dealing with serious hazmat victims. Serious victims of this incident may need to be stabilized and then sent to Anchorage for specialized care. Expedient decontamination will likely take place in the field through the use of ventilation fans to remove vapor residue from the victims.

C. INLAND SCENARIO - AVERAGE MOST PROBABLE CASE

Event Description: A recreational vehicle lost control in a busy intersection, and collided with a truck carrying chlorine cylinders. One of the cylinders was bounced off the truck in the collision, first striking a pedestrian; then, upon hitting the ground, the valve stem on the cylinder cracked, releasing chlorine.

Location: At the intersection of the Glenn and Richardson Highways in Glennallen.

Spill Size: An estimated 80 pounds of chlorine venting into the atmosphere.

Spill Description: As the valve cracked, 80 pounds of gaseous chlorine escaped into the surrounding

area. Although the valve vented for approximately 1 minute, the people within 500 yards of the incident were exposed to an IDLH atmosphere. Traffic is backed up on each of the intersections.

Time of Year: July

On-Scene Weather: Winds from the N at 2 knots, warm (71E F) and humid (87%).

Discussion: The highest priority in this incident is to evacuate the remaining population surrounding the incident (or shelter in place), treat victims in the community's hospital. Additional support to aid in evacuation, traffic control and triage may be needed from nearby communities.

Initial Action Description: The Glennallen volunteer fire department responds to the incident with the aid of the one State Trooper, and begins the immediate evacuation of the surrounding area. The fire department does not have Level A personal protective equipment or training to perform an immediate plug or patch of the chlorine leak. The ADEC SOSC activates the Statewide Hazmat Team, and the Valdez Hazmat Team begins to respond from their location. Federal and State natural resource trustees were notified. An FOSC Historic Properties Specialist was also activated.

Agency ICS Activation: Federal and State involvement in this incident will most likely be to oversee and insure that citizens are evacuated or sheltered in-place where necessary.

Initial On-Scene Investigation / Inspection Evaluation and Recommendations: Due to the poisonous/corrosive nature of the gas, and the lack of local response capabilities, evacuation of the surrounding area is recommended.

Initial Response Actions: Initial response to this incident includes emergency notification and evacuation.

Containment Countermeasures and Cleanup Strategies: If the cylinder has not already completely vented itself (which is most probable under this scenario), then it will be moved to an isolated area and left to vent in a controlled situation. The Valdez Hazmat Team with assistance from the local fire department will attempt to control the release at the valve through the use of a Chlorine a Kit. If this is unsuccessful, they will attach a hook to the cylinder and slowly drag (from a safe distance) the cylinder to a remote field or other secure location.

Resource Requirements: Level A Hazmat response gear is required for entry team members attempting to secure the release along with the Chlorine A Kit. If the release cannot be controlled a grappling device will be needed to snag the cylinder. Additional volunteers from the surrounding communities may be called upon to aid in evacuation efforts.

SCENARIOS: PART THREE - INLAND OIL

A. WORST CASE

Event Description: A recent seismic event causes unexpected displacement and settling of the Trans Alaska Pipeline System (TAPS) in the vicinity of MP 753.5, causing the pipe to crack from stress and release crude oil to the surrounding environment.

Location: Trans Alaska Pipeline Mile Post 753.5 in the immediate vicinity of the Tsina and Tiekel Rivers.

Spill Size: Approximately 1,680,000 gallons of Alaska North Slope Crude leaked from the underground pipeline before the spill was discovered and the pipeline shut down.

Spill Description: Upon discovery of the leak, operators of the TAPS shut down pumping operation and isolate the damaged pipeline by shutting valves. Spilled oil surfaces from the underground leak and flows across the local terrain following natural drainages and slopes into the Tsina River. At the time of discovery, approximately 1,000,000 gallons of oil had accumulated on the ground between the pipeline right of way and the banks of the nearby Tsina River. Approximately 20,000 gallons has already entered the waters of the Tiekel River, which flows in an easterly direction approximately 14 miles before entering the Copper River. The remainder of the spill is considered to have soaked into the noticeably oil saturated soils surrounding the damaged pipeline near the origin of the leak.

Time of Year: April

On-Scene Weather: Temperatures ranging from mid 50's during daytime to below freezing at night. Spring breakup conditions exist with melting snow and runoff prevailing during afternoon hours and freezing during late night hours.

Discussion: Given the source, magnitude and location of the spill, this spill would be of national significance. If uncontrolled, much of the spilled oil could enter the Tsina River, which drains into the Tiekel River and finally into the Copper River. Once the spill enters the Copper River, the containment response needs to be accelerated to successfully prevent the spill from contaminating significant portions of the environmentally sensitive Copper River Delta downstream.

Initial Action Description: Upon discovery the operators of the TAPS shut down pipeline pumping operations and activate their company response organization. Notification of the spill is made to the National Response Center, the Alaska Department of Environmental Conservation and the Joint Pipeline Office.

Upon receiving notification the EPA Federal On-Scene Coordinator (FOSC) and the ADEC State On-Scene Coordinator (SOSC) activate a Unified Incident Command System organization as per the provisions of the Unified Plan, Annex B. The operators of TAPS assume responsibility for the spill and establish a command center in Valdez with forward command posts located at Pump Station # 12. Federal and State natural resource trustees were notified. An FOSC Historic Properties Specialist was also activated.

Agency ICS activation: The FOSC requests additional EPA personnel from Seattle, activates the US Coast Guard Pacific Strike Team and activates the EPA Region X, Superfund Technical Assistance and Response Team contractor to provide ICS staff and spill response expertise.

The ADEC SOSC activates a Type 1 Spill Response Team to respond to the incident.

Upon notification and request from the FOSC/SOSC, federal and state agencies located in the Joint Pipeline Office (JPO) designate "agency representatives" to work directly in the unified government response organization which is established to oversee the response and direct activities as necessary.

Specific ICS actions:

- Trained personnel from the pipeline monitoring and surveillance section are assigned to the Operations Section, Containment/Cleanup Monitoring Branch and Spill Tracking Branch of the ICS.

- Personnel from JPO engineering and quality assurance sections provide expertise to the Operations Section of the Source Mitigation Branch, which will work with the responsible party personnel to repair the damaged pipeline and restore operations to the pipeline in a safe manner.

- Personnel from the Lands and Right of Way Section augment the Planning Section to provided agency permitting and land management input to cleanup operations.

- Clerical and administrative personnel from the office provide support to the Logistics and Finance/Administration Sections while the JPO's public relations specialists provide media/PIO support to the federal and state unified commanders.

- The Federal Authorized Officer from BLM and the State Pipeline Coordinator from ADNR or their representatives participate as key members of the spill-specific RSC that is formed.

Additional support from federal and state agencies not located within the JPO is requested as needed. US Fish and Wildlife Service personnel assistance is requested by the FOSC through the US DOI representative to the Alaska Regional Response Team. Together with personnel from the Alaska Department of Fish & Game, a Wildlife Response Branch is formed under the Operations Section. Additional personnel from these agencies are requested to staff the response and permitting operations under the Environmental Unit of the Planning Section. The SOSC requests the assistance of the Alaska Air National Guard to provide helicopters for aerial surveillance of the spill area and transportation of personnel and equipment. The State Troopers are alerted and requested to provide site control/security along the highway in the immediate vicinity of the spill.

Initial On-Scene Investigation/Inspection Evaluation and Recommendations: Reconnaissance crews from Pump Station #12 locate the approximate spill site along the pipeline right of way at mile post 753.5. Large quantities of crude oil are observed seeping out of the ground and following the local topography towards the Tsina River. Oil has accumulated in low spots and formed large pools several acres in size. Streamers of oil are also stretching all the way to the nearby river and entering the open channel. A pipeline security helicopter locates an oil slick in the Tiekel River that is still jammed with ice at several locations, approximately six miles downstream of the spill.

Initial Response Actions: Initial response crews from pump stations #10 and #12 mobilize heavy earthmoving equipment to construct containment and interception trenches on land and close to the banks of the Tisna River. The task force leader requests all available vacuum trucks, additional pumps and skimmers, additional temporary containment equipment and more personnel to form containment and recovery task forces. Upon discovery of oil in the river, the Incident Commander requests the use of

in situ burning to prevent the oil from spreading and entering the Copper River. The Unified Command is notified of the request, consults with DOI and DOC per the National Contingency Plan, and permission to burn is granted after an evaluation is made of the local weather, proximity of the spill to nearby populations, assessing the risk of fire spreading to surrounding areas, and consultation with local landowners/land managers.

Containment Countermeasures and Cleanup Strategies: As requested, additional earth moving equipment, vacuum trucks, skimmers and pumps, fast tanks, portable storage bladders, decon equipment and portable shelters begin to arrive on-site from pipeline pump stations. A staging area and field command center is located and a site safety plan is developed. After establishing safe zones and proper personnel protection, priority is given to containing the large pools of accumulated oil and intercepting the streams of oil that are flowing towards the river bank. A helicopter deployed "helitorch" is used to ignite the oil slick which is approximately 6 miles downstream of the spill site. A second helicopter carrying company and government observers is deployed to observe the burn and to verify as predicted that the resulting smoke plume dissipates before affecting human inhabited areas.

Field monitors from the Joint Federal and State Incident Command Organization arrive and begin observing the task force's activities. A wildlife survey team, including representatives from USFWS and ADFG, arrive to assess potential impacts to local wildlife. The unified command establishes a joint company/government assessment team to evaluate oil contaminated lands and shorelines and to establish priorities for the protection of non-oiled areas. Staging areas for oiled debris and waste are sited and a waste management plan is prepared.

Resource Requirements: Quick mobilization and deployment of earthmoving equipment is essential to contain spilled oil and prevent further contamination of the Tsina and Tiekel Rivers. This will require the pipeline operator's line-wide inventory of equipment, supplemented by equipment inventories from Alaska Clean Seas and Alyeska's SERVS. Some localized damage to the surrounding lands and associated resources is considered unavoidable to prevent catastrophic spreading. Additional personnel from contractors supporting pipeline operations and spill response cooperatives will be required to supplement initial response teams.

Continued response actions involving recovery of pooled oil on the surface, cleanup of oiled riverbanks, recovery of contaminated soils and restoration of the area is anticipated to take several months, with final remedial actions and monitoring lasting several years. Land managers, environmental regulators and wildlife trustee agencies will need to work in close coordination through the unified command to ensure a successful operation.

B. MAXIMUM MOST PROBABLE CASE

The maximum most probable spill scenario is determined from the largest recorded oil spill to date in the Prince William Sound inland zone.

Event Description, Size, Location & Time of Year: The largest known inland spill for the Prince William Sound subarea occurred on April 20, 1996, at Check Valve 92 which is located approximately 7 miles south of pump station # 10 at the Trans Alaska Pipeline milepost 593.7. The cause of the spill was determined to be a loose half-inch diameter threaded plug on a 6-inch bypass line. While the initial amount released is unknown, an estimated 30,000 gallons of crude oil have been recovered. The surrounding area was excavated to remove contaminated soil and determine the extent of contamination. The extent of surface and underground contamination appeared to be limited to the general area of the check valve (approximately 130 feet to the south and 119 feet to the north of the

valve). The weather at the time of the spill was clear. Temperatures ranged from the 30-55 degrees during the cleanup phase.

Containment Actions: Approximately 100 gallons of crude oil which had accumulated into two metal culvert access pipes were pumped from the pipes. The pipeline daily throughput was reduced from 1.5 million barrels per day to 700,000 barrels per day. Workers excavated the area to determine the source of the leak. On April 23, workers discovered the loose plug on the by-pass line. The threads on the plug were damaged and the threadolet was cracked. Workers installed a new plug as an immediate measure to stop the leak, and the 6-inch by-pass line was subsequently replaced.

Cleanup Actions: A vacuum truck was used to collect the oil which had accumulated in the metal culvert access pipes. Other recovered liquids (oil and water) were re-injected into the pipeline at Pump Station 10. Excavated soils, totaling approximately 3700 cubic yards, were transported to Fairbanks for remediation.

Restoration Action: The open excavations were backfilled and recovery wells were installed to monitor and recover potential product accumulation.

Federal and state agencies combined with the responsible party into a Unified Command structure. The Joint Pipeline Office and ADEC provided the primary response staff for this incident. The FOSC/SOSC sought additional assistance from involved agencies on an as needed basis.

C. AVERAGE MOST PROBABLE CASE

Event Description: While transporting a load of 8,000 gallons of refined diesel fuel from Valdez to Glennallen, the driver of a highway tanker truck loses control of his vehicle on a slippery hill, overturns and ruptures two compartments of the tanker, spilling approximately 4,500 gallons of diesel on the roadway.

Location: Richardson Highway, Copper Center, 600 yards north of the Klutina River crossing bridge.

Time of Year: September

On-Scene Weather: Air temperature 30EF, freezing rains, night time darkness.

Initial Actions Description: The accident is reported by passing motorists to the Alaska State Troopers who proceed to the site and notify ADEC of the spill. The trucking company's dispatcher in Anchorage, Alaska is notified by the State Troopers and in turn notifies company management. Company managers contact the operators of the Trans Alaska Pipeline, with whom they have a contract to haul fuel, and request assistance to contain the spill. The trucking company contacts a local spill response contractor in Anchorage to respond to the incident.

Within 2 hours of the accident, a crew from Pump Station #12 is on scene with company response equipment. Initial response crews block off several highway drainage culverts to contain spilled fuel in the ditches adjacent to the roadway. The remaining 3,500 gallons of fuel in the damaged tanker is pumped off into another tanker truck that was sent to the scene by the responsible party.

Approximately 1,200 gallons of additional oil and water is recovered over the next 12 hours by the commercial cleanup contractor's vacuum truck and by personnel using sorbent materials.

An undetermined amount of oil, estimated to be less than 300 gallons, enters the Klutina River but on the following day, no visible traces of oil are observed in the river during an overflight of the area by company personnel.

Cleanup Strategies: After initial response actions are accomplished, residual soil contamination of approximately 0.25 acres still remains saturated with approximately 3,000 gallons of oil. Under the supervision of ADEC personnel, the cleanup contractor recovers an additional 2,000 gallons from recovery and interception trenches. The area is flushed several times with fresh water in an attempt to remove free oil from surrounding gravels. A long-term remediation plan involving soil sampling, runoff collection and bioremediation is developed and approved by the FOSC/SOSC with input from adjacent landowners.