

# ALASKA'S OIL SPILL RESPONSE PLANNING STANDARD

## History and Legislative Intent

Report to Prince William Sound Regional Citizens'  
Advisory Council  
AUGUST 2018

WHEREAS, the citizens and the legislature of the State of Alaska worked diligently to ensure that the state's citizens and natural resources are protected from the occurrence and consequences of oil spills by enacting comprehensive legislation known as HB 567 to regulate oil spill prevention, response, contingency planning, financial responsibility, inspection authority, and other subjects relating to the safe transportation of oil and other hazardous substances, as a result of the lessons learned from the spill of the Exxon Valdez,

lessons learned from the spill of the Exxon Valdez'  
transportation of oil and other hazardous substances' as a result of the

*Excerpt from Resolution passed by communities and stakeholders  
in support of the implementation of HB 567 mandates (1991)*

Elise DeCola and Tim Robertson  
Nuka Research and Planning Group, LLC

The opinions expressed in this PWSRCAC-commissioned report  
are not necessarily those of PWSRCAC.

## ACKNOWLEDGEMENTS

The authors acknowledge with gratitude the contributions of the following individuals, who were willing to share their perspectives and memories about the development and passage of HB 567, based on their firsthand participation in the process (positions and affiliations during the *Exxon Valdez* oil spill and its aftermath noted in parentheses).

Steve Cowper (Governor of Alaska)

Drue Pearce (Alaska Senate President and Chair of the Special Committee on Oil and Gas)

Larry Dietrick (Director, Alaska Department of Environmental Conservation Division of Spill Prevention and Response)

David Rogers (Legislative Staff)

Marilyn Heiman (Staff to House Resources Committee)

Michael Williams (Attorney for British Petroleum)

Dennis Kelso (Commissioner, Alaska Department of Environmental Conservation)

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Donna Schantz

The authors take full responsibility for any errors or inaccuracies in this document.

## AUTHORS' NOTE

This report is one of hundreds that Nuka Research has produced over the years, but it stands apart for many reasons. It presents a less formal narrative approach than our typical technical reporting. We felt this was appropriate given the subject matter and our shared personal connection to the topic. One of us lived and breathed the events described here, while the other responded in a college dorm room a continent away by switching majors to environmental science. Both of us have since built careers that center on cultivating vigilance and preparedness for events like the *Exxon Valdez* oil spill – largely inconceivable, until they are real.

We have both observed the cycle of preparedness and the inevitable slide toward complacency during the time between disasters. In oil spills as in many things, we must learn from history and endeavor never to repeat the past. We hope that this report will compel and inspire the next generation of mavericks and visionaries to continue to protect Prince William Sound and all other natural, beautiful places from oil spills and other environmental threats.

Tim Robertson and Elise DeCola, June 2018

*"Few will have the greatness to bend history itself; but each of us can work to change a small portion of events, and in the total; of all those acts will be written the history of this generation."*

Robert F. Kennedy

*"History is a cyclic poem written by time upon the memories of man."*

Percy Bysshe Shelley



## Abstract

This report tells the story of how and why an unlikely alliance of regulators, politicians, oil industry executives, and international spill response experts used the *Exxon Valdez* oil spill as a springboard for reimagining oil spill preparedness and response in America's 49<sup>th</sup> state.

On June 27, 1990, Governor Steve Cowper signed a law that created, among other things, a response planning standard for oil spills. The new standard was a direct result of the massive failure of the spill response system in place when the *Exxon Valdez* ran aground. It established a foundation that continues to distinguish Alaska, and particularly Prince William Sound, as having a world-class preparedness and response system.

The genesis of Alaska's response planning system was an Emergency Order issued by the Alaska Department of Environmental Conservation two weeks after the spill occurred, compelling Alyeska Pipeline Service Company (Alyeska) – the consortium operating the Trans Alaska Pipeline and Valdez Marine Terminal – to create a response system with sufficient equipment, vessels, manpower, and ancillary support to handle a 10 million gallon spill. It prescribed a minimum round-the-clock response crew of 12, a 10,000 barrel per day on-water oil recovery capacity, dual escorts for all laden tankers transiting the Sound, and a two-hour response time to initiate containment and recovery. Alyeska was given 38 days to comply with the order; non-compliance carried the risk of shutting down the terminal.

Alyeska met the challenge with an Interim Plan that reflected long days of intense analysis and reluctant compromise among a team of industry response experts and attorneys. They sketched out a significantly enhanced response system modeled after the Sullom Voe Terminal in the Shetland Islands. This industry-generated Interim Plan included many of the elements later incorporated into the state law and regulations. In the case of Alaska's response planning standard, the legislative requirements tie back directly to the system that industry designed to handle an *Exxon Valdez*-sized spill. While opinions on the resulting bills vary, everyone interviewed for this report agreed that the response planning standard is a product of consensus and compromise from all sides.

The law that was enacted in June 1990 has been described as “self-executing,” in that it contains a number of very specific provisions that limited the need for interpretation during the regulatory process. One of the most important provisions – the requirement for a 300,000-barrel response capacity to be in place within 72 hours of a spill – was a direct nod to the fact that simply requiring a set amount of boom, skimmers, and vessels to be in place did not ensure an adequate response. A time-bound and capacity-driven standard was viewed as the best way to avoid ever reliving the *Exxon Valdez*.

Every individual interviewed for this report spoke about their involvement in creating and establishing Alaska's response planning standard with a palpable sense of accomplishment, which is particularly notable given their considerable achievements since. To a person, they were adamant that if the system created after the 1989 spill were to be weakened or removed, Alaskans would face the risk of reliving an event that is still deeply impressed upon all who lived through it.

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# ALASKA'S OIL SPILL RESPONSE PLANNING STANDARD

## History and Legislative Intent

August 2018

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### I. Introduction

This report summarizes historical information about the development, passage, and implementation of House Bill 567 (HB 567), which created Alaska's oil spill response planning standard.

#### Why Now?

This report was developed during 2017-2018, at a time when many of the key individuals involved in creating Alaska's RPS were approaching the end of their careers. Some had moved onto work on other issues, and some had passed away. The purpose of creating this report and the process used to do so – which relied heavily on firsthand recollections of key participants – acknowledge that policy development is much more than legislative language or regulatory enforcement.

As the 30<sup>th</sup> anniversary of the *Exxon Valdez* oil spill approaches, there are many new faces in Alaska's legislature and executive agencies, and some may not fully appreciate the legacy they have been entrusted to protect. This report memorializes the "why" behind Alaska's oil spill response planning standards, in hopes that this knowledge will continue to inform the implementation of and compliance with these standards.

#### Regulatory Legacy of *Exxon Valdez*

This report focuses on the legislative and regulatory processes that occurred in the

wake of the March 24, 1989 *Exxon Valdez* oil spill. Most of the activity described ties to the State of Alaska legislative and regulatory process that began almost immediately following the spill, and continued until mid-1992.

While the focus of this report is on events that occurred in Alaska from 1989-1992, it also considers factors in place prior to 1989 and explores the legacy of the state's response planning standards to the oil spill contingency planning and response system currently in place in Prince William Sound.

Alaska was not the only jurisdiction to respond to the 1989 oil spill with new laws and policies; this report also touches on the concurrent changes to the U.S. oil spill response framework through the Oil Pollution Act of 1990.

#### Reconstructing the Story

This report synthesizes information from a number of sources to document the intent behind Alaska's response planning standard. The oil spill response framework envisioned after the spill and enhanced over time is ultimately the product of years of hard work, critical thinking, and creative problem-solving by a group of talented professionals and passionate stakeholders who were impacted in some way by the *Exxon Valdez* oil spill.



**Governor Steve Cowper signs into law a suite of bills developed to enhance Alaska's oil spill preparedness in the wake of the Exxon Valdez oil spill.**

Photo courtesy of David Rogers

In developing this narrative, we relied on a small group of individuals with a range of experiences and backgrounds – the former Governor and Senate President, leadership from within the Alaska Department of Environmental Conservation's (ADEC) Spill Prevention and Response program, legislative staffers, and oil industry executives – to help reconstruct and interpret events that occurred many years prior. Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) staff and volunteers also provided critical input and knowledge.

While the narrative has been shaped by personal reflections and recollections of long-past events, the authors also undertook an extensive literature review. Our research spanned written memoranda, meeting summaries, internal legal and policy briefs,

and other contemporaneous sources from 1989 through the mid-1990s.<sup>1</sup>

### About this Report

The report begins with a brief summary of the *Exxon Valdez* oil spill, which served as the catalyst for introduction and passage of Alaska and U.S. laws creating new standards for oil spill preparedness and response.

The body of the report highlights key components of the Alaska state law and implementing regulations that created the state's oil spill response planning standards. The legislative history is examined to emphasize the intent behind these standards. The opinions and perspectives of firsthand participants are described to provide context for the legislative process and to highlight key achievements.

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<sup>1</sup> Key sources included the Alaska State Archives and PWSRCAC's document management system, include

The report concludes with the authors' observations on the importance of Alaska's response planning standards to the current

Prince William Sound oil spill preparedness systems.

## 2. From Oil on Water to Ink on Paper



**Valdez Marine Terminal in 1989.** (State Archives)

It is impossible to discuss Alaska's oil spill response planning standard without also discussing the *Exxon Valdez*. Without exception, each individual interviewed for this report began by recalling his or her experience during the 1989 spill and its aftermath.

While the broad details of the spill are well known, the narrative of the spill response – how it unfolded and progressed, how it impacted coastal communities, and how it exposed deep cracks in existing preparedness – shaped the subsequent legislative response. In order to understand how and why Alaska's oil spill response planning standard is so significant, it is useful to revisit a time when no such standards existed.

### Crude Oil Tankers in Prince William Sound

When the first laden oil tanker pulled away from the dock at the Valdez Marine Terminal in August 1977, the era of Prince William Sound crude oil shipping began. This historic voyage continued a legacy of oil and gas industry operations that began with the first oil claims in western Cook Inlet in the late nineteenth century. With the 1967 discovery of North America's largest known oil field in Prudhoe Bay, the scope and scale of Alaska's oil and gas industry expanded significantly.<sup>2</sup>

<sup>2</sup> Alaska Humanities Forum, 2017; McDowell Group, 2017.

**“The vessel’s course, down a 1,200-mile corridor designated by the United States Coast Guard, was to take it through the Valdez Narrows – at one juncture only 2,700 feet wide – and across Prince William Sound into the Gulf of Alaska.”**

New York Times article describing the voyage of the *Arco Juneau* (1977)

Construction of the Trans Alaska Pipeline and the Valdez Marine Terminal during the mid-1970s created an economic boom that resulted in thousands of jobs, both during the construction phase and after oil first began flowing in 1977.

During the 12 years that elapsed between the *Arco Juneau*’s historic first voyage and the grounding of the *Exxon Valdez*, approximately 6.65 billion barrels of crude oil were transported by tanker through the waters of Prince William Sound on their way to market.

### Oil Spill Response Framework in 1989

At the time of the *Exxon Valdez* oil spill, tankers were operating under a network of oil spill planning and response requirements established through state and federal law. The federal Clean Water Act<sup>3</sup> and complementary State of Alaska statutes and regulations<sup>4</sup> addressed oil pollution prevention and response, which were the foundation for the plans and equipment that were in place when the *Exxon Valdez* ran aground.

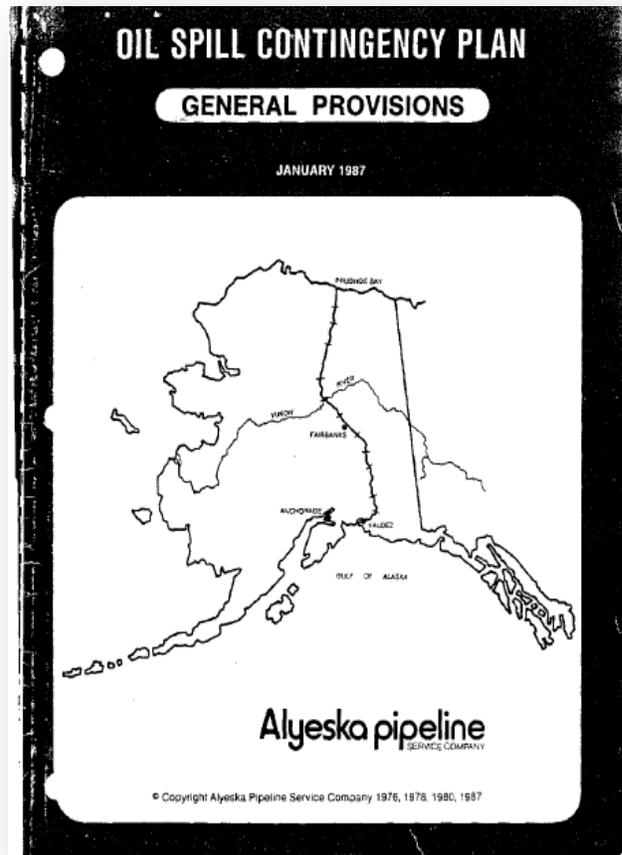
Alyeska Pipeline Service Company (Alyeska) published their first oil spill contingency plan in 1976, and was operating under a 1987 update to that plan when the oil spill occurred.<sup>5</sup>

<sup>3</sup> 33 USC Sec. 1251 et seq. (1972).

<sup>4</sup> AS 46 and 18 AAC 75.

<sup>5</sup> The evolution of Alaska’s contingency planning requirements is described in Section 4 of this report.

The 191-page plan outlined objectives and described roles and responsibilities for various members of their spill response team. It contained detailed information about estimating spill volumes, and general descriptions of spill response tactics. It also covered training and drills.<sup>6</sup>



**The 1987 Alyeska Oil Spill Contingency Plan identified a cache of equipment to support spill response, but when the *Exxon Valdez* spill occurred, the equipment needed to contain and recover the spill was buried under a massive snow pile.**

Since the plan applied to the entire pipeline, terminal, and tanker operations, a great deal of the information included was specific to inland spill response (along the pipeline route) and not applicable in Prince William Sound.

<sup>6</sup> Alyeska, 1987.

The 1987 Contingency Plan listed equipment that was available at the Valdez Marine Terminal and in other field locations. The equipment included 11 boats, 13 skimmers, and a total of 21,000 feet of boom of various sizes.

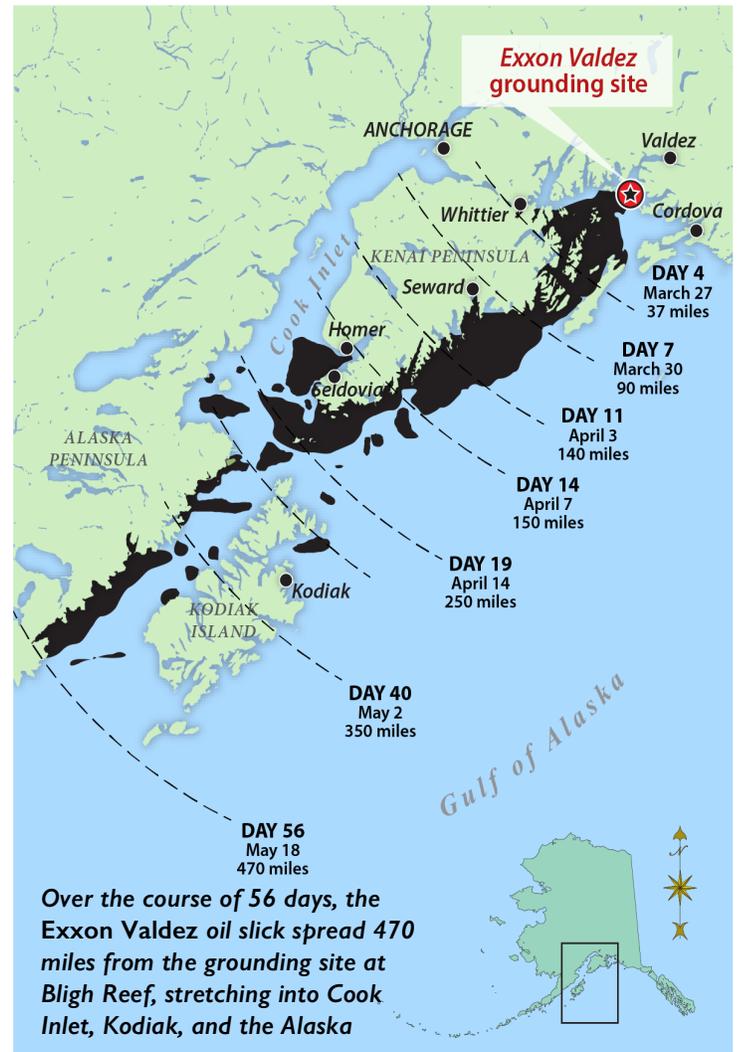
There were storage containers that could hold about 1,500 gallons of recovered fluids, and enough protective equipment to outfit 50 responders. The Valdez equipment cache also had a variety of hand tools and work equipment like compressors, hoses, pumps, lights, and battery packs.

On March 24, 1989, as a laden tanker ran aground on a well-charted reef, this equipment was buried under 10 feet of snow.<sup>7</sup>

### “Utterly Overwhelmed” by the Amount of Oil in the Water

Within three hours of the *Exxon Valdez* tanker grounding, nearly 6 million gallons had already flowed out of the damaged tanks and into Prince William Sound. Within 12 hours, the slick was estimated to be 3 miles by 5 miles. The sheer magnitude of this release completely overwhelmed both people and resources.

Alyeska had initial responsibility to try to contain and recover the spill. They responded soon after the grounding was first reported, but encountered a number of challenges. The spill response barge was not operational because it was undergoing maintenance following its use to respond to a spill at the terminal three months prior. There were not enough trained personnel and most of the response equipment was covered in snow. As a result, the initial response resources that were supposed to be on-scene within five hours of a spill did not reach the spill site until over 14 hours after notification.



Alyeska's initial focus was on lightering fuel off the damaged tanker, which further slowed the deployment of response systems. Containment booming around the leaking tanker was completed at 11:00 am on March 25, over 34 hours after the spill was first reported.

<sup>7</sup> Alaska Oil Spill Commission Report, 1990.



**Vessels on-scene at Exxon Valdez oil spill – April 5, 1989. (Alaska State Archives)**

On the second day, as their officials and personnel arrived in Valdez, Exxon began to assume responsibility for the spill response. While Exxon scrambled to mobilize people and equipment, local communities had already begun to mobilize fishing vessels, desperate to act against the unfolding disaster. A growing sense of frustration among local residents created tensions that played out in public meetings, the media, and their day-to-day lives. Despite calm, clear weather and a slick that “hovered in deep, calm waters near the grounded tanker,” the response was “utterly overwhelmed by the amount of oil in the water.”<sup>8</sup>

During the initial response, the U.S. Coast Guard closed the Port of Valdez to tanker traffic, which led to a subsequent reduction to throughput for the Trans Alaska Pipeline System, since oil movements out of the terminal had stopped.

**“The hard facts are that neither Alyeska nor the federal and state governments were prepared to deal with such a disaster...However, the Exxon Valdez incident was such a significant event that the oil industry and government were forced to examine how they would respond to future oil spills.”**

Michael Williams, former BP attorney, in *How the Exxon Valdez spill gave birth to modern oil spill prevention plans*, Alaska Dispatch News (2014)

### **National Oil Spill Response System: a “Toothless Tiger”**

During the days and weeks that followed, the pattern remained much the same. The oil continued to spread. The response continued to be inadequate. And Alaskans – from the governor’s office to the schoolyard – continued to experience outrage and disbelief that the safety system they had assumed to be in place had failed so spectacularly. The Alaska Oil Spill Commission described a level of frustration with both government and industry plans and as “toothless tigers” incapable of facing a major oil spill.

<sup>8</sup> Alaska Oil Spill Commission, 1990.

The governor of Alaska declared a disaster on the third day after the grounding, at which point the oil had already spread to cover more than 50 square miles. The initially calm weather eventually turned stormy, compounding the disaster by spreading the oil further to the south and west while precluding any cleanup.

### Communities Disrupted

As the oil spread, day-to-day life in coastal communities became completely focused on the spill response. Communities, families, and businesses temporarily set aside routines and responsibilities during the initial frantic weeks, not realizing that the cleanup process would drag on for years. As the oil spread and coated areas of the coast, the focus shifted from recovering or dispersing floating oil slicks to cleaning up oiled beach and dealing with masses of oiled wildlife.

Communities were on the front lines during the initial response, as the spill spread well beyond the capacity of Alyeska or Exxon to mitigate. An influx of responders from outside Alaska began to arrive by the hundreds. Communities that had self-directed *ad hoc* cleanup operations were forced to turn over local control to this broader spill response system. Some local residents were hired by the response, while others refused to work for Exxon. This fueled underlying stress and tension in communities that were already stretched thin.

The *Exxon Valdez* cleanup process continued across four summers before it was finally called to a halt in 1992. At its peak, the \$2.5 billion response involved 11,000 people, 1,400 boats, and about 80 aircraft. Despite this significant effort, winter storms may have

cleaned more beaches than the actual response.



*Exxon Valdez beach cleanup workers (Alaska State Archives)*

### Legislative Changes

The significant gaps and shortcomings in the Prince William Sound oil spill response system were laid bare during the multi-year cleanup process. Before the cleanup was completed, the State of Alaska had enacted laws and drafted regulations that would fill these gaps by reimagining a response system sufficient to manage another large-scale spill. The cornerstone of this approach was the creation of a response planning standard.

### 3. Emergency Order Compels a New Approach

Actions taken by Governor Steve Cowper during the first days of the spill laid the foundation for Alaska's response planning standard. A decisive leader by all accounts, Governor Cowper is said to have given the ADEC a very succinct directive for how to build adequate oil spill response capacity, which essentially amounted to "do the right thing."<sup>9</sup>

Recognizing that simply requiring stockpiles of spill response equipment did not assure a functional response capacity, the governor encouraged a more holistic approach that would ensure that Alaska never relived the *Exxon Valdez*.

#### "Rigorous but Achievable" Standards

While the eyes of the world were on Alaska and its massive oil spill, a small group of state employees, legislative staffers, and oil industry experts – each charged from above with building a better response system – rolled up their sleeves and got to work. As they set out to imagine the possible, they had the good fortune to draw from the knowledge and experience of a few visiting Norwegians.

When the spill occurred, the Norwegian Coastal Administration had sent a small delegation to offer suggestions to Alyeska for clean up technologies to mitigate the spill. Instead, the visiting experts ended up in a series of intense strategy sessions held in *ad hoc* meeting spaces across Valdez. Larry Dietrick and Steve Provant, contingency planners from ADEC, leveraged the Norwegians' expertise by focusing on the practical: using the *Exxon Valdez* as a worst case scenario, how would you design a system sufficient to mount a response to that spill in Prince William Sound?

This approach helped to sketch out the minimum equipment capability requirements and delivery timeframes that would eventually evolve into Alaska's response planning standard. Phrases like "rigorous but achievable" were tossed around, and the outcome included some fairly specific requirements, such as 10,000 barrels per hour recovery capacity. The concept of a 72-hour initial response window also came out of these early discussions, based on the fact that oil spills become exponentially more difficult to clean up as the oil spreads away from the source and naturally degrades over time.<sup>10</sup>

**"We would meet at night in a windowless jury room in the Valdez law library."**

Larry Dietrick and Dennis Kelso, formerly of ADEC, on the *ad hoc* meetings that led to the issuance of an Emergency Order immediately following the *Exxon Valdez* spill (from August 2017 interview)

This element of the process is important because the response planning requirements that ultimately ended up in Alaska's statutes and regulations were actually created by technical experts with firsthand experience preparing for and responding to oil spills. The standards reflect the deliberate intent to set a high bar that held the industry accountable to concrete requirements. The only way to avoid a repeat of the *Exxon Valdez* response was to create standards that compel the industry to build and maintain a system that many had assumed was already in place at the time of the *Exxon Valdez*.

<sup>9</sup> Personal communications with Dennis Kelso, August 28, 2017.

<sup>10</sup> Personal communications with Larry Dietrick and Dennis Kelso, August 28, 2017.

Before the response planning standards were formalized through the legislative process, they were implemented through an emergency order by the State of Alaska.

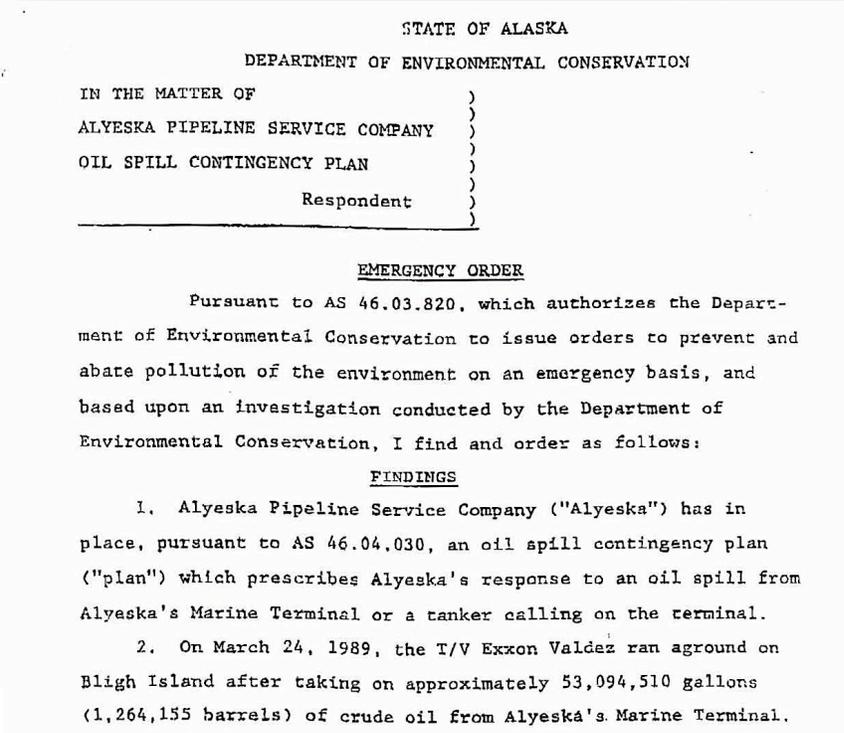
**Emergency Order**

On April 7, 1989, two weeks after the tanker ran aground, ADEC Commissioner Dennis Kelso signed an Emergency Order<sup>11</sup> that detailed all of the failures in Alyeska's oil spill contingency plan, noting that "Alyeska's inadequate response to the spill under the plan to date demonstrates its inability to respond as required under the plan to any new oil spills." The Emergency Order set out a series of specific and time-bound requirements for Alyeska to put in place a robust oil spill prevention and response system commensurate with the risks that had been laid bare when the Exxon Valdez ran aground.

The Emergency Order directed Alyeska to submit a modified Oil Spill Contingency Plan that included the following components:

- All core contingency plan equipment in place at the terminal and dedicated to response;
- A dedicated, round-the-clock response crew of at least 12 on site and immediately available at the terminal at all times;
- Pre-booming all tankers;

<sup>11</sup> State of Alaska Department of Environmental Conservation, Emergency Order in the matter of Alyeska Pipeline Service Company Oil Spill Contingency Plan, pursuant to AS 46.03.820.



*Excerpt from 1989 Emergency Order that required additional equipment and capacity at Valdez Marine Terminal.*

- Dual tug escorts for all outgoing (laden) tankers to Hinchinbrook Entrance;
- Extension of mandatory pilotage zone for outgoing tankers;
- Sufficient response equipment, vessels, manpower, and ancillary support available to arrive on-scene within two hours of notification for a 10 million gallon oil spill in Prince William Sound;
- Communications requirements to monitor movements of outgoing tankers; and
- Enhanced notification requirements.

The State of Alaska insisted that Alyeska comply with these substantial additional response standards in fairly short order, suggesting that continued operation of the terminal could be in jeopardy if the

conditions were not met.<sup>12</sup> For example, the Order specified that Alyeska must acquire at least 30,000 feet of ocean boom and 10,000 barrels per hour skimmer capacity (including pumps, transfer and lightering equipment, and storage) and have this equipment in operation by May 15, 1989.

By giving Alyeska a 38-day time limit to build a response system that could handle another major oil spill, the Emergency Order created a strong imperative to innovate and problem-solve.

### Industry Responds with Interim Spill Plan

The State of Alaska had drawn a line in the sand, and Alyeska now faced the significant challenge of envisioning a system that would meet the Emergency Order criteria. Another series of late night strategy sessions ensued, this time led by the industry.

Mike Williams, then an attorney and policy expert with BP, was one of the leaders of this process. In a 2014 opinion piece in the *Alaska Dispatch News*, Williams recalls, “There was not a port in the world that required such a response. Plans for Valdez and other ports had always been written for ‘the most likely spill,’ a spill of about 10,000 barrels. These new standards meant that the new plan would have to be revolutionary.”<sup>13</sup>

BP sent Williams to Anchorage to work with an unlikely team made up of spill response specialists and attorneys. His marching orders were simple; figure out a way to comply with the Emergency Order to “make sure the terminal stays open.” From a suite of hotel rooms overlooking Cook Inlet, this

team of strangers from different industries and countries stared at a blank page, compelled by a ticking clock and a tense political climate.<sup>14</sup>

Collectively, Alyeska’s strategy team had a good deal of knowledge about spill cleanup technologies and marine operations, and also understood the legal and regulatory context for demonstrating compliance. However, they struggled to imagine how to assemble sufficient forces to handle 10,000 barrels per hour of oil within two hours, anywhere in Prince William Sound. They scanned the globe for model response systems of the scale envisioned by the State of Alaska, and eventually set their sights on the Sullom Voe Terminal in the Shetland Islands. At the time, the Shetland oil terminal had a substantial offshore oil spill response capacity – arguably the most robust in the world.<sup>15</sup>

Keith Cameron, a BP response expert sent over from Great Britain, suggested bringing over the large weir boom system in Southampton, and mounting it on the deck of an anchor-handling tug so that it would be immediately available any time a tanker sailed through Prince William Sound.<sup>16</sup> This was the breakthrough that led the team to begin furiously sketching a prototype system of escort and response tugs, oil storage barges, and high capacity skimmers. The system borrowed elements from Sullom Voe, where they had a dedicated response capacity resident at the terminal, ready for immediate deployment.

<sup>12</sup> State of Alaska Department of Environmental Conservation, Emergency Order in the matter of Alyeska Pipeline Service Company Oil Spill Contingency Plan, pursuant to AS 46.03.820.

<sup>13</sup> “How the Exxon Valdez spill gave birth to modern oil spill prevention plans,” *Alaska Dispatch News*, March 18, 2014.

<sup>14</sup> Personal communications with Mike Williams, September 25, 2017.

<sup>15</sup> The citizen oversight model in place in Sullom Voe ultimately provided the impetus for the creation of regional citizens advisory councils through the federal Oil Pollution Act of 1990.

<sup>16</sup> “How the Exxon Valdez spill gave birth to modern oil spill prevention plans,” *Alaska Dispatch News*, March 18, 2014.

The industry team realized that adding response skiffs, boom, and trained personnel to the equation would create the immediate response capacity needed to meet the state's mandate for two-hour response times. The foundation for Alyeska's current Ship Escort/Response Vessel System (SERVS) was born this way, in the Sir Francis Drake Suite at the Captain Cook Hotel, in the early hours of a morning during the spring of 1989.<sup>17</sup>

**“How did we know we'd built the right-sized system? The Cordova fishing fleet wanted ten times as much equipment, and industry wanted to cut it in half.”**

Michael Williams, former BP attorney, personal communications (September 25, 2017)

The result of hard work and creative problem solving, the Interim Response Plan<sup>18</sup> envisioned a substantial system, which included:

- Three Escort Response Vessels (ERV), each equipped with two skimmers rated at 385 barrels per hour each, 4,600 feet of boom, a 20-foot work boat, and 4,000 barrels of oil storage capacity (two of these would travel alongside transiting tankers, the third stationed in Valdez);
- One Weir Boom Response Vessel (WRV), equipped with a high-capacity skimming system (rated at 4,200 barrels per hour) and a 20-foot work boat (stationed in Valdez);
- One Dynamic Skimming System (DSS), a 140,000 barrel integrated tug/barge permanently manned and equipped with two sweep arms (combined boom/skimming units with

2,100 barrels per hour rating), stationed at Knowles Head;

- One Lightering Vessel, an integrated tug/barge with 180,000 barrels storage capacity, equipped with fenders, pumps, moorings, and ancillary salvage equipment (stationed at Knowles Head);
- Two storage barges, one 73,000 barrels and one 63,000 barrels, each equipped with an assortment of containment boom (about 16,000 feet total), pump and skimming systems, and absorbent materials (stationed in Valdez);
- Two ship assist tugs available for pollution response (stationed in Valdez); and
- Two large fishing vessels under contract to Alyeska to assist in booming and skimming operations (in Valdez Harbor).

The Interim plan described a tiered response where the ERV would be on-scene immediately to support initial oil spill response, with a trained and dedicated ERV Response Supervisor on board to coordinate ship safety and direct spill response activities. Mike Williams points to this feature as particularly important and a direct result of the chaos and disorganization that characterized the initial response to the *Exxon Valdez* oil spill. By having a qualified initial Incident Commander ready to go, the ERV can get to work immediately to contain and control the spill during those critical initial hours.<sup>19</sup>

The second tier response would arrive on site within three hours, consisting of the Lightering Vessel and Dynamic Skimming System stationed at Knowles Head for rapid

<sup>17</sup> Personal communications with Mike Williams, September 25, 2017.

<sup>18</sup>“ Interim Operating Plan dated May 1, 1989 of Alyeska Pipeline Service Company.”

<sup>19</sup> Personal communications with Mike Williams, September 25, 2017.

deployment anywhere in Prince William Sound. Once on-scene, these resources would be directed by the ERV Response Supervisor. A third tier, available on site within 10 hours of notification, includes the Weir Boom Response Vessel and third ERV stationed in Valdez. One ship assist tug would tow a storage barge from Valdez to the spill site, while the other ship assist tug, along with contracted fishing vessels, would be sent to the incident site as soon as possible.

The industry team was in constant communication with ADEC as they drafted the Interim Plan, which like nearly everything that occurred during the policy fallout from the *Exxon Valdez* reflected equal parts out-of-the-box thinking and compromise. Even within the group assembled at the Captain Cook, there were differences of opinion borne of different corporate cultures among the oil companies that formed the Alyeska consortium. Williams describes the “socialization of concepts” among the industry representatives, and recalls some “annoyance” among oil company executives

at the roughly \$60 million annual price tag attached to the proposed new Prince William Sound response system.<sup>20</sup>

Nevertheless, on May 1, 1989, only 39 days after the spill, Alyeska delivered an Interim Spill Plan that met the very high bar the state Emergency Order had set. The core components of the system tied directly back to the failed *Exxon Valdez* response, by ensuring that there would be enough capacity resident in Prince William Sound for the first 72 hours of a spill, backed up by resources that could be brought to the site first from within the region and eventually from beyond Alaska.

Soon after Alyeska had reimagined oil spill response through the interim plan, the Alaska legislature began to envision a regulatory framework that would legally compel its existence.

**VESSEL MANPOWER AND TRAINING**

There will be approximately 48 people dedicated to vessels maintained for emergency response duties in Prince William Sound. These include:

ERV #1	8 crew/12 hour shifts	=	4/shift
ERV #2	8 crew/12 hour shifts	=	4/shift
ERV #3	8 crew/12 hour shifts	=	4/shift
WRV	8 crew/12 hour shifts	=	4/shift
DSS	8 crew/12 hour shifts	=	4/shift
LIGHTERING VESSEL	8 crew/12 hour shifts	=	4/shift
<b>TOTALS</b>	<b>48</b>		<b>24/shift</b>

In addition, there will be one ERV Response Supervisor on each shift.

The Interim Plan that Alyeska developed included dedicated crew of 48 people (Note: image is crooked due to quality of original document scan).

<sup>20</sup> Personal communications with Mike Williams, September 25, 2017.

## 4. Evolution of Alaska's Oil Spill Contingency Planning Regulations

The process of drafting, passing, and enacting new oil spill response standards for tankers and other oil facilities operating in Alaska took three years. It concluded approximately one month before active cleanup of the *Exxon Valdez* oil spill was declared complete.

On June 27, 1990, Governor Steve Cowper signed into law a suite of new legal requirements to ensure that all parties would be better prepared and equipped to handle future oil spills in Alaska. Understanding the significance of these new standards requires a basic understanding of the regulations that were in place prior to 1990.

### Requirements Dating to Late 1970s

At the time of the *Exxon Valdez* oil spill, Alaska already had a number of statutes, regulations, and programs focused on preventing and mitigating oil pollution. The ADEC had been in place for 18 years at the time of the accident. The requirement for oil spill contingency plans was enacted in October 1977, and the regulations specified that operators must identify “the amounts, specifications, limitations, and storage locations for cleanup equipment” along with “response times from the time of the discharge to deployment of containment and recovery equipment.”<sup>21</sup>

An important driver for these early regulations was the state's dissatisfaction with the level of preparedness that the federal government was willing to accept for Prince William Sound operations. As the startup of the Trans Alaska Pipeline System loomed large, tensions grew between state and federal regulators over how much equipment and preparedness was enough. Randy Bayliss,

the DEC regional supervisor for Prince William Sound during the development of the original oil spill contingency plan for the terminal and tanker operations, is noted to have taken a strong stance in insisting on a higher level of equipment than was ultimately put in place. Bayliss was quite candid in pointing to the tension between federal and state agencies regarding the sufficiency of contingency plans, with the state calling for higher preparedness and the federal government defending the plans as sufficient.

***“APO [the federal pipeline office] and USCG say the plans are quite good. SPCO [State Pipeline Coordinator's Office]...and DEC say the plans stink and other reviewers (NMFS, Fish & Wildlife) agree.”***

Randy Bayliss, ADEC Regional Supervisor for Prince William Sound (May 2, 1977 memo)

Three major areas were cited where Alyeska was not meeting the state's expectations for equipment, “(1) they refuse to buy more than 11,000 feet of boom (we want about 60,000 feet); (2) they refuse to place any boom or boats in Prince William Sound (we want about 80,000 feet and six boats divided up at sites on Montague, Naked, and Glacier Islands); (3) they refuse to buy lightering pumps.”<sup>22</sup>

The 1977 regulations specified approval criteria for the state to accept contingency plans, including “applicants must provide and maintain oil discharge pickup or removal equipment of sufficient capacity to remove the median oil discharge in not more than 48 hours, and the maximum probable oil spill within the shortest feasible period of time.” The regulations also required that oil spill

<sup>21</sup> Register 63, October 1977, Regulations at 18 AAC 75.310(8) and (10).

<sup>22</sup> Alaska Oil Spill Commission report, 1990 (pg 41).

response equipment “must be stored and maintained so that it can be deployed and operational within no more than 12 hours after the oil discharge.”<sup>23</sup> Maximum probable oil discharge was defined as the entire capacity of the vessel.

### The First Contingency Plan

As the state sought to enhance their requirements in the face of new risks from tanker and terminal operations in Prince William Sound, the federal government granted approval, on June 11, 1977, to the Alyeska Oil Spill Contingency Plan. There was some language in the approval that acknowledged there would be future reviews and that ongoing enhancements and improvements were expected, but the first version of the approved plan fell well short of the equipment standards that the State of Alaska established in their regulations, which were finalized after the first Alyeska plan took effect.

Not only did the plan not meet the state's expectations, ADEC's Bayliss conducted an inspection in December 1977 and found that of 170 pieces of equipment listed in Alyeska's plan as being present at the Valdez terminal, 137 of them were missing or inoperable.<sup>24</sup>

Controversy and disagreement among state regulators, federal regulators, and the industry continued over the next several years. As ADEC began to implement their new regulations, Alaska's Attorney General was facing a lawsuit in federal courts challenging the state's authority to create standards for the tanker industry, under the Supremacy Clause of the U.S. Constitution.<sup>25</sup>

Little progress was made during the late 1970s to enhance the oil spill response

system that Alyeska had put in place, and state contingency plan reviews were stalled by the legal challenges.

**“Alaska law requires preparation of contingency plans for a variety of situations. And though the Department of Environmental Conservation (DEC) can withhold approval, it has inadequate statutory and regulatory means to force compliance with plan standards. State law also currently provides only minor sanctions for failing to follow a plan in the event of a spill.”**

Alaska Oil Spill Commission Report (1990), describing the state's authorities under laws and regulations in place at the time of the Exxon Valdez oil spill

The regulations were updated in 1981, and the contingency plan approval criteria were strengthened by requiring applicants to “have ready access to sufficient resources to protect environmentally sensitive areas and areas of public concern.” The revised regulations specified that operators must “maintain in their areas of operation sufficient oil discharge containment and removal equipment to rapidly contain the oil discharge...and remove that discharge within a 48 hour period when adverse conditions do not threaten safety of personnel.”<sup>26</sup>

By 1982, ADEC had conducted their first complete review of the Alyeska Oil Spill Contingency Plan, granting a “conditional” 45-day approval, followed by full approval of the plan in January 1983. The state's approval was granted despite the results of a “reality test” by then ADEC District Supervisor in Valdez, Dan Lawn, which stated that the plan “probably satisfies the regulation requirements on paper; however APSC [Alyeska] has never been able to demonstrate that the recovery rates listed in

<sup>23</sup> Register 63, October 1977; 18 AAC 75.340 (5) and (9).

<sup>24</sup> 1990 State Commission report, pg 45.

<sup>25</sup> Chevron USA Inc. v. S. Hammond (76 F2d 483).

<sup>26</sup> Register 79, October 1981; 18 AAC 75.350(1) and (4).

Appendix B are possible to attain.”<sup>27</sup> Lawn’s speculation was confirmed in March of 1989.

### Maritime Fiction

Those who were involved in the initial frenzy following the *Exxon Valdez* oil spill recall a phrase that has been attributed to several different individuals, and was likely spoken more than a few times:

“Alyeska’s oil spill contingency plan at the time of the spill was the greatest work of maritime fiction since *Moby Dick*.”<sup>28</sup>

Clearly, a disconnect existed between the state and federal regulations governing oil spill contingency plans and the actual system in place at the time of the *Exxon Valdez* oil spill. Alyeska was not able to meet the state planning standards to “rapidly contain and remove the discharge within 48 hours,” despite favorable weather during the initial days of the spill. They did not have enough equipment on hand to handle the spill that occurred, let alone the “maximum probable spill” of the tanker’s entire capacity. And the equipment at the Valdez Marine Terminal could not be “deployed and operational” within 12 hours because it was buried under a pile of snow.

The problem wasn’t a lack of regulations; it was that the regulations had not compelled an adequate oil spill response system. Therefore, as the Alaska legislature began to contemplate ways to strengthen state requirements, they confronted the same basic challenge that the technical team from ADEC had faced during their heated work sessions with the Norwegian spill response experts: *How can the state compel the industry to create and maintain sufficient spill response capacity to combat an Exxon Valdez scale event?*

**“The notion that safety can be insured in the shipping industry through self-regulation has proved false and should be abandoned as a premise for policy. Alert regulatory agencies, subject to continuous public oversight, are needed to enforce laws governing the safe shipment of oil.”**

Alaska Oil Spill Commission Report (1990)

### Alaska’s Legislative Package

A legislative response to the largest tanker spill in U.S. history was inevitable, and both the State of Alaska and the federal government ultimately enacted a suite of new laws. As thousands of cleanup workers attempted to deal with the mess in Prince William Sound, a team of legislators and policy experts worked in Juneau to lay the groundwork for a regulatory fix.

There were several bills introduced into the sixteenth Alaska legislative session, in both houses. Of all of these, House Bill (HB) 567, which was introduced first into the House, and later moved through the Senate, is most closely associated with Alaska’s response planning system and the Prince William Sound oil spill response capacity that it created.

When the oil spill occurred, Alaska’s legislature was nearly through its first session (which ended May 9, 1989), and while there were a few initial bills that passed right away, such as restructuring the system of oil spill fines and penalties, the larger pieces would require more time. During the recess, the Alaska Oil Spill Commission had convened to conduct a detailed after-action analysis of the incident and what went wrong, along the same lines as the recently completed commission report into the Space Shuttle Challenger disaster. The commission report and those who were involved with it

<sup>27</sup> Alaska Oil Commission Report, 1990 (pg. 47).

<sup>28</sup> The authors have heard this quote attributed to both Dennis Kelso and Steve Cowper.

provided a lot of input and direction to the legislative process.<sup>29</sup>

When the second session of the legislature reconvened on January 8, 1990, Governor Steve Cowper was ready with a suite of bills that focused specifically on oil spill response. While the final Oil Spill Commission report would not come out until February of 1990, many of the findings were already publicly known, and these helped to shape the legislative response. There was a great deal of tension in Juneau at the time, and there were a number of competing agendas ranging from the Oiled Mayors group, who were calling for swift and drastic reform, to senior legislators cautioning against hasty action. Due in part to differences in climate in the House and Senate, the process that unfolded involved most of the legislation being crafted in the House of Representatives.<sup>30</sup>

HB 567 was drafted by a working group spearheaded by Senator Drue Pearce, Chair of the Special Committee on Oil and Gas. The decision to move it through the House first was a practical one, to take advantage of a slightly less charged political climate. But the contents of the bill reflected input from legislators and their staff from both houses.

On February 22, 1990, the bill was passed into the House Rules and Finance Committee, and it proceeded from there through the Resources Committee and Finance Committee, before passing out of the House on April 30. Just over a week later, on the final day of the second legislative session of Alaska's sixteenth state legislature,<sup>31</sup> with only minutes to go before the clock struck midnight and the session adjourned, a

combined Senate-House bill was passed and was subsequently signed into law.

Along the way, there were numerous hearings,<sup>32</sup> meetings, and teleconferences. Legislative staff put in long hours, and members of the public delivered impassioned statements at hearings across the state. Participants in this process describe deliberate efforts to ensure that the bill retained broad enough appeal to ensure its passage.

At the same time, there was a push to make the law as specific as possible, so that there would be no room to water it down or otherwise alter the intent during the regulatory process. Written accounts of the HB 567 policy process often refer to the need for a "self-executing" statute. This concept is supported by an opinion from the Division of Legal Services and Legislative Affairs, which came out shortly after the legislation was passed, implying that aspects of the new law – including response planning standards and financial responsibility requirements – were explicit enough to be enforceable before regulations had been drafted.<sup>33</sup>

In recalling the process of negotiating the final bill, former Senator Pearce summed up their goal in terms similar to those used to design the Prince William Sound response system in the weeks after the spill: "At the end of the day, we needed a suite of bills that nobody loved but everybody could live with." Senator Pearce assigned David Rogers, an attorney on the legislative staff, to chair an informal working group to hammer out the

<sup>29</sup> Personal communication with Drue Pearce, October 19, 2017.

<sup>30</sup> Personal communication with Drue Pearce, October 19, 2017.

<sup>31</sup> May 8, 1990, as documented in <http://w3.legis.state.ak.us/docs/pdf/ROSTERALL.pdf>

<sup>32</sup> At the time, PWSRCAC staff and Board members were among those who provided testimony during legislative committee hearings.

<sup>33</sup> Memorandum from David E. Rogers to PWSRCAC, May 1, 1991 (client privileged communication, information used with permission).

contents of the bill.<sup>34</sup> Rogers, who specialized in brokering complex environmental laws and regulations, recalls this process as the most intense of his career. His recollection of the final month of that legislative session involves being stuck in a room for hours on end of tense deliberations, with the marching orders from Senator Pearce to “go figure it out and come out when you’re done.” Rogers recalls, “I’ve never been more exhausted.”<sup>35</sup>

***“And so we began, working night and day, sometimes in large general sessions going through various versions of the bill line by line; sometimes in subgroups hammering out specific compromises on tough issues... Representatives of industry, local governments, the Administration, House and Senate Committees, native corporations, environmental and other interest groups, the Alaska Oil Spill Commission and members of the public in general participated in these sessions.”***

David E. Rogers in a memorandum to PWSRCAC (May 1, 1991; reprinted with permission)

Most of the provisions in the bill reflect working group consensus and compromise. There was an implicit recognition that the “window of opportunity” for legislative action would not remain open indefinitely. Still, David Rogers reported that even after the bill passed, “there were lingering concerns, and further controversy and debate over regulatory interpretations of legislative intent and other issues was expected.”<sup>36</sup>

And of course, the Alaska legislature wasn’t the only such body making changes. While negotiations played out, key Alaska legislators were coordinating their efforts with their counterparts in Washington, D.C., attempting

to harmonize the Alaska state regulations with the emerging federal Oil Pollution Act. In a parallel effort, industry representatives were also coordinating their efforts in Juneau and D.C., continuing to try to manage the compliance burden for the new state and federal systems.<sup>37</sup>

## Key Provisions

Section 9 of the newly enacted law that began as HB 567 includes general requirements for oil spill contingency plans, and Section 10 establishes the planning standards. The law<sup>38</sup> includes several provisions that created new oil spill response planning standards that would be applicable in Prince William Sound:<sup>39</sup>

- Changed the performance standard for responding to an oil spill from the “shortest feasible time” to the “shortest possible time;”
- Created response planning standard for oil terminal facilities to contain or control, and cleanup a discharge equal to the capacity of the largest oil storage tank within 72 hours, with an opportunity for ADEC to require a higher planning standard volume in high risk areas;
- Required tank vessels or oil barges with a cargo of 500,000 barrels or more to have enough resources within the region of operation to contain or control, and clean up a 300,000 barrel discharge within 72 hours;<sup>40</sup> and

<sup>34</sup> Personal communication with Drue Pearce, October 19, 2017.

<sup>35</sup> Personal communication with David Rogers, September 26, 2017.

<sup>36</sup> Memorandum from David E. Rogers to PWSRCAC, May 1, 1991 (client privileged communication, information used with permission).

<sup>37</sup> Personal communication with Drue Pearce, October 19, 2017.

<sup>38</sup> AS 46.04.030.

<sup>39</sup> The law also addresses planning standards for exploration or production facilities and pipelines, but these are not discussed because they are beyond the scope of this report.

<sup>40</sup> AS 46.04.030(k)(3). For crude oil vessels under 500,000 barrels, the requirement is for a 50,000

- In addition to the 72-hour response standard, each contingency plan holder has to maintain either within or outside their region of operation additional resources to contain or control and clean up a realistic maximum discharge within the shortest possible time, and to demonstrate that out of region resources are accessible and will be deployed and operating at the discharge site within 72 hours.

***“The general principles underlying the development of the bill...can be the basis for interpreting the legislation and evaluating the implementation program when all else fails:***

- 1. The Legislature wanted enhanced protection from oil spills based on verifiable facts, reasonable assumptions and fair application of standards and other requirements;***
- 2. To the greatest extent possible, the new system should be set up so that everybody knows what is expected of them in advance with sufficient flexibility to deal with a variety of circumstances and changing technology; and***
- 3. Paperwork and related regulatory requirements should be adequate to protect the public interest but should not require excessive information submittals or unnecessary duplication of efforts and should encourage timely administrative action.”***

David E. Rogers in a memorandum to PWSRCAC (May 1, 1991; reprinted with permission)

Beneath each of these standards lies a complex web of negotiation and compromise that influenced the final word of law. And while many aspects of the law support the goal of “self-implementing” standards, there are a few areas where legislators kept the

barrel discharge. A separate standard for non-crude tank vessels was also established.

statutory language vague enough to require additional work during the regulatory process.

### **Crude Oil Tanker Standard**

The first of several “deal-breaking” issues that surfaced during the legislative process related to the question of planning volumes for crude oil tankers. Prior to HB 567, there had been a single response planning standard that applied to all types of operations. The new legislation specified planning standards based on the type of operation and the type of oil involved. The bill as passed required oil tanker operators with a capacity over 500,000 barrels to “contain or control and clean up” within 72 hours a 300,000 barrel spill.

This volume is a compromise from the original language proposed by Governor Cowper, which specified that plan holders must demonstrate that they can respond to a “tankerful within 72 hours.” The industry pushed back forcefully on this provision, and this controversy had the potential to bring the entire process to a standstill. The Cowper Administration is ultimately credited with breaking through on this issue, by establishing a “bottom line” of 300,000 barrels, which is slightly more than the volume of oil spilled by the *Exxon Valdez*.<sup>41</sup>

The 72-hour standard was more difficult to rebut. Marilyn Heiman, who was on the staff of the Alaska House Resources Committee when HB 567 was introduced, noted that the experience waiting for equipment to arrive during the *Exxon Valdez* oil spill had helped to ground truth the issue for political leaders. Day after day, they waited for equipment to arrive. “Nothing arrived. There was nothing there.”<sup>42</sup>

<sup>41</sup> Memorandum to PWSRCAC from David E. Rogers, May 1, 1991.

<sup>42</sup> Personal communications, August 28, 2017.

The statutory language makes it very clear that these are *planning* and not *performance* standards, which was a critical distinction for industry. Planning standards establish criteria that must be demonstrated through contingency plans. However, there is no corresponding requirement that the identified equipment and systems perform to the contingency plan specifications. The planning standards ensure that operators have enough equipment in place to clean up a worst case spill, but fall short of requiring operators to demonstrate compliance by ensuring that the equipment performs to the contingency plan specifications.

### **Department Discretion and Prevention Credits**

There are several instances where the new law gives ADEC the discretion to adjust standards based on other risk factors. The department could, for example, adjust the planning standard in cases where a spill enters an environment other than open water. The rationale for this example would be instances where rapid clean up may do more harm than good.

The new law established the concept of prevention credits, where the department could make exceptions to planning standards in cases where a plan holder had prevention measures in place that might reduce the likelihood or severity of an oil spill – measures such as double hulls, secondary containment systems, or enhanced vessel traffic systems.

### **“Contain or Control”**

During the legislative process, the language for what needed to be accomplished in the first 72 hours changed from “contain and clean up” to “contain or control and clean up.” The reasoning here was to provide more flexibility from a tactical perspective, since sometimes a spill could be controlled by directing or funneling oil toward recovery

systems, rather than specifically containing it with encircled boom.

***“Alyeska will have to increase its capability significantly to satisfy the new law...more accurate factors must be developed to take into account various parameters influencing equipment performance such as available daylight, weather, historical skimming performance, response time, oil recovery strategy, rate of oil volatilization, losses in the water column, oil viscosity, emulsification, the overall thickness of the floating oil and the free water that is recovered in the oil. The uncertainty inherent in each of these factors argues against enshrining any particular efficiency rates in the regulations at this time.”***

Larry Dietrick, in a letter providing ADEC comments on draft HB 567 regulations (February 12, 1991)

### **Establishing Realistic Maximum Discharge Volume**

The new law broadly defined “realistic maximum discharge,” without attaching a specific number or formula for calculating the volume. The challenges in defining this term relate back to some of the give and take around establishing a 300,000-barrel spill volume rather than a full oil tanker storage volume for the purpose of planning standards. Clarifying how realistic maximum discharge would be determined was left to the regulatory implementation team, and was a source of considerable disagreement during that process.

### **Implementing Regulations**

Once the oil spill response planning standards were signed into law, ADEC was faced with the prospect of drafting regulations to implement these new standards. This process began in early 1991 with the formation of an HB 567 Implementation Technical Workgroup. Like the legislative process that created the new law, the process of developing regulations involved a great deal of discussion, discord, and ultimately, compromise.

PWSRCAC's internal records indicate the receipt of multiple drafts of regulatory language and supporting technical analysis between February and June 1991. The public review draft of ADEC's regulations was released on July 8, 1991, initiating a 45-day public comment period. The workgroup continued to meet during the development process and through the public review phase. PWSRCAC also worked actively to disseminate information through the media and public announcements, as well as direct mailings. The record from public hearings held in Anchorage and Juneau during August 1991 include comments from PWSRCAC staff active in the regulatory development workgroup. By the time the comment period closed in late August 1991, a significant body of comment and analysis had been created.<sup>43</sup>

Several issues related to Alaska's response planning standard were hashed out through the regulatory process, including: defining realistic maximum oil discharge; establishing technology requirements to meet the "contain or control and clean up" standard; operating assumptions for evaluating response planning standard compliance; use of non-mechanical response techniques; and prevention credits.

### **Defining Realistic Maximum Oil Discharge**

Defining realistic maximum oil discharge (RMOD) was one of the more controversial issues that the legislature passed along to ADEC during the regulatory process.<sup>44</sup> A number of approaches were considered, ranging from requiring each operator to

develop a technical risk analysis to using a simpler across-the-board approach of largest possible release volume. According to House committee hearing records, the original term used was "worst case oil discharge," but this was changed to "realistic maximum" to open the door to a standard below the full bucket volume. It is important to remember that the legislature and ADEC were both looking at this issue more broadly than just for tankers, and this confounded the discussion, since total spill volumes and risks differ considerably for pipelines or production facilities compared to tankers.

The rulemaking process contemplated different volumes for the out-of-region standard before settling on 60 percent of the total cargo volume. This was an issue that PWSRCAC lobbied hard to keep at the full volume of the tanker. Industry had pushed for a lower standard (30 percent), so again the final result was a compromise.

***"How big a spill to plan for is the most controversial issue in these draft regulations. As written, contingency plans must start with the assumption that losing all of the oil in a tanker or barge is a realistic possibility. DEC is likely to get intense pressure to lower that standard. Alaskans need to let DEC and the Governor know that planning for a major oil spill less than the full contents of a tanker is unacceptable."***

Statement by PWSRCAC President Chris Gates,  
(June 1, 1991)

### **Best Available Technology**

The legislature also transferred the burden of establishing technology standards to the ADEC regulatory process. Even so, it was unclear to many whether ADEC was expected to prescribe specific design standards for oil spill recovery technologies, or whether they were going to allow for more flexibility. The dividing lines on this issue were not always clearly industry versus

<sup>43</sup> PWSRCAC has compiled a comprehensive record of all of the documentation spanning the introduction of HB 567 in 1990 to its most recent legislative amendments in 2005. The record also documents the complete regulatory process. The resulting document, at 3,971 pages, is available in the PWSRCAC archives.

<sup>44</sup> See discussion on previous page under heading "Establishing Realistic Maximum Discharge."

government, as sometimes more prescriptive standards, even if strict, give the industry a level of predictability that they do not always have when regulators apply a more flexible approach.

### **Planning Standard Assumptions**

While the response planning standards created by HB 567 were clear, they did not address variables or assumptions concerning weather conditions, operational periods, actual recovery rates (rather than manufacturer nameplate recovery rates), and other more practical issues. The topic of assumptions was strongly debated during the regulatory development process. The legislature had been provided with some general assumptions (such as 12 hour per day operations and 30 percent de-rating of skimmer nameplate<sup>45</sup>) during the legislative process, and there was some disagreement as to whether these were offered as examples or intended to be carried through into regulatory requirements.

### **Non-Mechanical Response**

There was significant debate during the regulatory process regarding whether non-mechanical response techniques (dispersants or in-situ burning) would be allowed to meet the “contain or control and clean up” requirement. In the end, the standard focused on mechanical recovery as the primary response measure.

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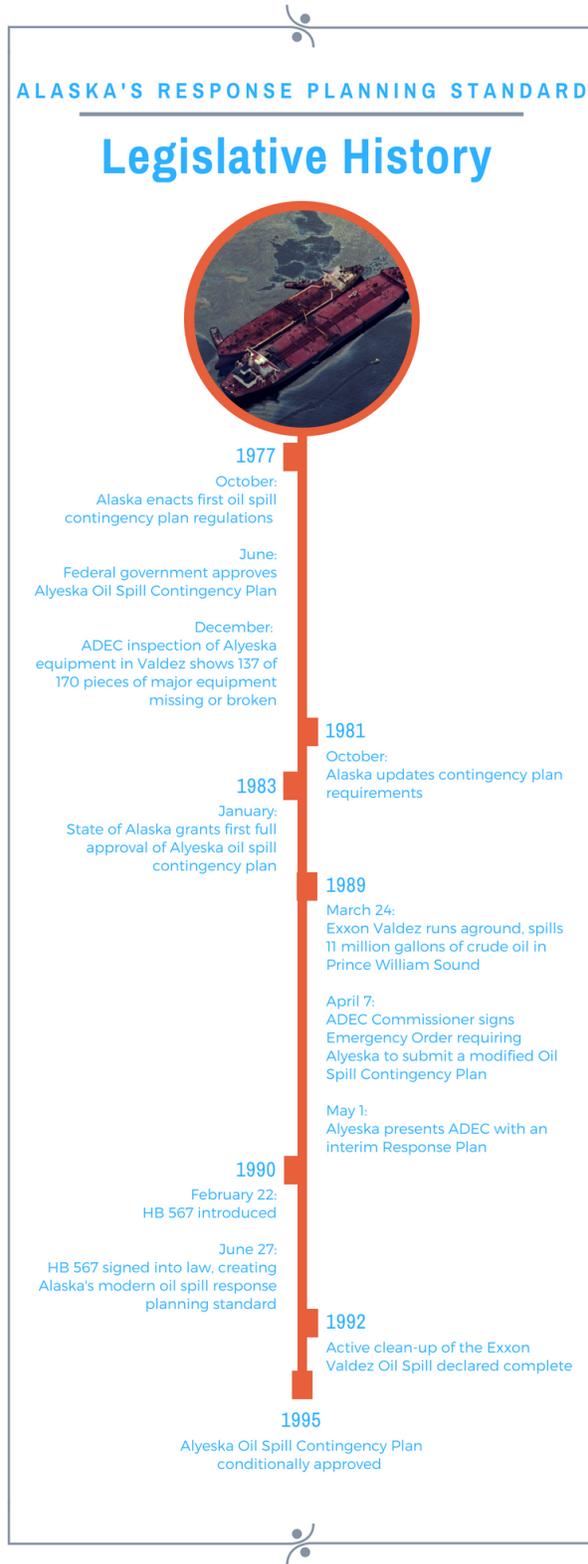
<sup>45</sup> De-rating of skimmer capacity is a common practice in oil spill contingency planning. When manufacturers develop oil skimmers, they are assigned a “nameplate” recovery capacity through a standard evaluation process involving operation of the skimmer in test tanks. To account for the fact that oil spill skimming systems rarely perform to the standards achieved during tank testing, their performance is often de-rated, or reduced by a standard percentage, to represent the efficiency losses that often happen in real world conditions. Thus, a 30 percent de-rating for a 100 barrels-per-hour skimming system would be 30 barrels-per-hour.

### **Prevention Credits**

During the regulatory process, there were disagreements regarding the intent of prevention credits, and specifically whether prevention measures already required by law should be eligible for such credits. ADEC tended to view the purpose of these credits as incentivizing additional measures rather than reducing planning standards for measures that were already required. Others insisted that the legislative intent behind this provision was to provide a system for recognizing and awarding risk-reduction measures, regardless of whether they were required by law. If an operator had measures in place to reduce oil spill risks, they should be rewarded with a lower planning standard.

Some considered prevention credits to pose a threat to the overall goal of enhancing response capabilities, since theoretically such credits could erode the spill response capacity compelled by the new laws and allow the industry to end up back where they were before HB 567 was enacted. Nonetheless, the incorporation of prevention into the new regulatory framework was viewed as an important component to creating a safer system overall.

## 5. What Alaska Achieved



The *Exxon Valdez* oil spill legislative process is fascinating on many levels. The spill created an imperative for legislative change, but arguably, the immediate actions that the State of Alaska took – namely, the Emergency Order and resulting re-imagining of the Prince William Sound response system – probably had the most significant impact on how the resulting changes came about.

### Response System Pre- and Post- HB 567

The table below shows how the adoption of the HB 567 response planning standards drove a significant enhancement to spill response equipment in Prince William Sound. This comparison highlights how critical the spill volume is to driving a robust resident response capacity.

The creation of a capacity-based response planning standard drove a more systematic approach to developing oil spill response capacity. Prior to the new standards, equipment stockpiles were literally piles. The planning standard drove technical experts like the Norwegian/Alaskan team and the Alyeska group to look at the problem differently – how to assemble a force that could control and recover a specific volume within a specific timeframe. This lends itself to calculations that factor in recovery capacity, storage, and timing. Not only did the planning standard drive the industry to stockpile more equipment, it provided a framework for both industry and regulators to evaluate capacity in a straightforward and transparent manner.

The systematic approach also addressed other shortcomings illustrated during the 1989 spill – the need for trained people, well maintained equipment, and a common understanding about how response is organized and implemented.

Equipment and Requirements in Prince William Sound	Pre-1990 Response Planning Standard	Post-1990 Response Planning Standard
<b>Planning standard</b>	Pickup or remove median discharge in 48 hours, maximum probably spill in shortest time feasible	Contain or control and clean up within 72 hours a 300,000 barrel spill
<b>Boom</b>	~5 miles	~50 miles
<b>Skimmers</b>	13 units	~110 units 60,000 barrels per hour capacity
<b>On-water storage</b>	~12,000 barrels	~900,000 barrels
<b>Escort tugs</b>	Single escort for laden tankers through the narrows	Dual escorts throughout Prince William Sound
<b>Other equipment</b>	None	Pre-positioned equipment caches throughout Prince William Sound; nine additional prevention and response tugs

### Pick a Number

There are two very important numbers (besides 567) that come up again and again in the response planning standard legislative history: 72 and 300,000. According to numerous sources involved in the process, both are directly tied to the *Exxon Valdez*, both reflect significant discussion and compromise, and both are ultimately somewhat arbitrary.

Steve Cowper reflected that one of the major lessons of the *Exxon Valdez* was that “if you had that stuff you had to have it ready to go.”<sup>46</sup> The 72-hour standard that HB 567 created seems to have originated during the technical sessions in Valdez in the days after the spill, when experts from ADEC and the Norwegian Coastal Administration put their heads together to re-imagine a system that might have effectively combatted the spill.

<sup>46</sup> Personal communications with Steve Cowper, September 29, 2017.

They recognized the opportunity lost during the initial hours and days of the oil spill, when floating oil could have been contained and recovered before it began to thin and spread for hundreds of miles. Creating an immediate response capacity close enough to a possible spill site to mitigate the slick before it gets out of hand would require a time-bound planning standard. Three days, with a tiered capacity, seemed to strike the right balance.

**“I used...[72 hours]...because I was told to.”**

John McDonough, attorney, to Alaska House Resources Committee (February 26, 1990)

The 300,000-barrel standard was more a case of “nobody won, nobody lost.” The planning standard volume adopted into law and regulation was a compromise between those who wanted to build a response system that could handle the full volume of

the largest tankers coming into Valdez and those who feared such a system was financially and technically unfeasible.

The Cowper Administration and the technical experts from ADEC were firm in their beliefs that there had to be a hard number for the maximum spill volume and it had to be a large enough volume to compel equipment along the lines of the systems created by industry for the Interim Plan. In the end, they settled at an even number that was basically the *Exxon Valdez* oil spill volume rounded up. The 300,000-barrel standard was hard to shoot down, since it reflected an actual, recent, worst-case event.

Marilyn Heiman, who worked on the legislative staff for the Alaska House during the development of HB 567 and later on the regulatory process, observed that without a clear standard, compliance is determined based on subjective review. A clear standard corrects for regulator bias and creates a more predictable compliance framework for the regulated industry.<sup>47</sup>

Dennis Kelso, former ADEC Commissioner, frames this issue as one of perspective. Prior to the *Exxon Valdez* oil spill, the party line was that “industry is taking care of it.” The spill provided a rude awakening for stakeholders who assumed that “taking care of it” equated to being capable of cleaning up any spill they created. From industry’s perspective, “taking care of it” meant meeting the commitments in their contingency plan to maintain minimum equipment stockpiles. One of the accomplishments of measurable standards is that they create a common understanding of what is and is not going to be taken care of.

### Incentivizing Prevention

The realistic maximum oil discharge volume, which was established after much debate to

be 60 percent of the total tanker cargo volume, ended up providing a powerful incentive for oil spill prevention. One of the major findings to come from the 1990 Alaska Oil Spill Commission Report was the importance of prevention, in light of the significant challenges to cleaning up marine oil spills. The additional out-of-region planning standard became the baseline for allocating prevention credits,<sup>48</sup> which allow a plan holder to plan for a reduced realistic maximum oil discharge volume if certain prevention systems are in place.

One of the changes that HB 567 introduced was to change the terminology for spill plans from oil spill contingency plans to oil spill contingency *and prevention* plans.

### Tiered Approach

The regulations established two different standards, similar to the tiered approach used in the Alyeska Interim Plan. An initial response planning standard required that operators have sufficient capacity to contain and recover 300,000 barrels in 72 hours. An additional layer requires sufficient resources available from out-of-region to clean up a spill of 60 percent of the total vessel cargo.

The system of prevention credits may be used to reduce the 60 percent volume, but cannot work around the 300,000 barrels in 72 hours standard. Conversely, the prevention credits are capped to ensure that no operators can use this incentive to zero out their out-of-region response planning standards.

<sup>47</sup> Personal communications, August 28, 2017.

<sup>48</sup> Prevention credits are intended to create an incentive for operators to adopt prevention measures, which otherwise might not yield any tangible benefits to the company bottom line. There are differing opinions as to whether they have been successful.

## Chicken and Egg

The legwork that occurred in the wake of the *Exxon Valdez* created a bit of a head start for the legislative teams, who had a tangible example in hand of a standard (ADEC's Emergency Order) that could compel a significantly enhanced response system (Alaska's Interim Plan). There was certainly robust and in-depth debate during both the HB 567 legislative process and subsequent rulemaking. But it could be argued that the foundational work that was done in March-April 1989, itself predicated on the details of the spill and the failed response, all worked together to create the system still in place today.

***“Nobody got everything they wanted, but in the end we all got something we could live with.”***

Michael Williams, former BP attorney (9/25/2017)

## Planning vs. Performance

Much of the discussion about response standards emphasized that Alaska was establishing a standard for planning, rather than performance. This is essentially the same approach taken by the federal government under the Oil Pollution Act of 1990, and the foundation of oil spill preparedness in the United States.

While Alaska's response planning standard was successful in building a much larger, better maintained, geographically distributed cache of oil spill response equipment, no planning standard can guarantee that an oil spill will not still cause considerable harm.

Industry experts raised the point many times during the HB 567 process that the additional capacity being added to the Prince William Sound system is no guarantee that 300,000 barrels of oil would actually be contained and recovered during the first three days of a spill response. There are still a number of practical and logistical challenges associated with major marine oil spill response that were not solved by the creation of a stronger response planning standard.

Nonetheless, without a standard that requires sufficient equipment available close enough to rapidly deploy, there is no question whether the spill cannot be mitigated. If there is no equipment nearby, there is no immediate response.

The strong focus on in-region equipment that carried forward from the Emergency Order to the regulations as implemented ensured that there will be equipment nearby in Prince William Sound the next time it is needed.

**Given the nature of catastrophic spills, it is not expected that the response planning standards in HB 567 can be reflected in actual performance. It is doubtful 300,000 barrels could be completely cleaned up and that all needed equipment can be on scene within a 72 hour period. Throughout the legislative and regulatory development of HB 567, the regulated community has repeatedly stressed that the expectations in HB 567 are beyond the capability of technology and historical basis. For example, oil will elude containment and cleanup efforts; some oil will go ashore; weather, malfunctions and human performance will compromise efficiency, and all will contribute to an effectiveness that may be less than that which can be shown in a theoretical, mathematical planning model. Experience shows that a catastrophic spill will result in a long term (i.e., over many months or even longer) clean-up, which will be the "shortest practical time."**

*Excerpt from Chapter 4, "Process Engineering," in a report prepared by ECO Consulting that ARCO Marine, Inc. submitted to ADEC on October 1, 1993 regarding compliance with new state regulations*

## 6. Learning from History

Like the oft-quoted line about the Alyeska oil spill contingency plan and *Moby Dick*, there is another famous quote that is attributed to various parties. The Spanish philosopher George Santayana is generally believed to have originated a saying made famous by Winston Churchill, among others:

“Those who cannot learn from history are doomed to repeat it.”

This concept is certainly applicable to the issue of oil spill planning standards in Prince William Sound. Of the hundreds of people who had their hands in this process, the handful that were interviewed for this report returned to several common themes.

### Timing is Everything

It is an unfortunate but well-established fact that most of the environmental policy in place in the U.S. today was born of a major catastrophe.<sup>49</sup> The *Exxon Valdez* oil spill was a galvanizing event that created an imperative without which the current oil spill response planning standards – both in Alaska and federally – might not exist.

Regarding the impetus for legislative action, Steve Cowper observed, “If you strike at the right time you can get some results.”<sup>50</sup>

Dennis Kelso, Commissioner of ADEC at the time of the spill, offered that the *Exxon Valdez* had been a “major realigning event” for both Alaska and the U.S.

Much like the window-of-opportunity for mounting an effective on-water oil spill

response, the chance to move from environmental catastrophe to policy change is time bound. Eventually, public and political will dissipates and the opportunity is lost.

### Team of Rivals

In the wake of the spill, the term “complacency” was tossed around in the media, the legislature, and among stakeholders harmed by the spill. There was no denying that the system had failed, and this compelled a multilateral process to change it. Mike Williams, who worked for BP at the time, describes the process as “many different teams working toward the same goal.” Steve Cowper recalls that the industry could not afford to come out too aggressively against the state’s initiatives, because they had lost so much public trust after the oil spill.

Certainly, the industry representatives who worked on this issue along the way were advocating for the least burdensome changes, while regulators and stakeholders were pushing for the highest possible standards. But there was a general acceptance that changes would take place and this helped everyone to focus on the substance of those changes. From the initial strategy sessions within ADEC and later by the Alyeska technical team that put together the Interim Plan, there was a strong focus on the system elements that should be in place. The level of compromise and the underlying tensions were real, but the oil spill had created a strong enough imperative to keep the process moving forward toward concrete objectives.

<sup>49</sup> For example, the Clean Water Act is often attributed to the heavily polluted Cuyahoga River in Cleveland catching fire in 1969. <https://www.allegHENYfront.org/how-a-burning-river-helped-create-the-clean-water-act/>

<sup>50</sup> Personal communications with Steve Cowper, September 29, 2017.

***“Opinions as to what to include in the bill were so diverse that compromise seemed impossible. Senator Pearce resolved this conundrum by locking Riki [Dr. Riki Ott, with Cordova District Fishermen United] and me in a room and threatening to throw away the key if we didn’t reach a compromise. After many days, with David Rogers acting as moderator, compromise language was thrashed out. The language reflected the task force’s plan, plus a lot of additional protection for villages and hatcheries. Both Riki and I were ostracized by our respective constituencies for the compromise, but much of the legislation that emerged from that compromise was then used by U.S. Sen. Frank Murkowski as a basis for OPA 90, the federal Oil Pollution Act that governs oil transportation in the U.S. today.***

***I hope Riki is as proud of that effort as I am.”***

Mike Williams of BP during the HB 567 process, in “How the Exxon Valdez spill gave birth to modern oil spill prevention plans,” Alaska Dispatch News (March 18, 2014).

In addition to the tensions between stakeholders, industry, and regulators, there were also significant tensions among the oil companies represented in the Alyeska consortium. Both the legislative record and the rulemaking process provide examples of how the various oil companies involved did not always share the same positions or priorities. Drue Pearce reflected that one of the key takeaways for the State of Alaska from the post-spill legislative process should be the incredibly “unwieldy” structure of a consortium-run pipeline.

The legislative process brought many of the more contentious issues to a head and was where some of the most heated discussions occurred and the most significant compromises struck. Republican and Democratic legislators worked closely together, united by outrage at the spill and its impacts to their constituents. Drue Pearce noted that the process of accommodating so many divergent opinions made the process

challenging, but in the end helped the workgroup to make the “most informed decisions possible.” The outcome was a successful legislative package that achieved its goal of compelling a more robust oil spill response system in Prince William Sound and statewide.

### Scanning the Globe

The Sullom Voe Terminal in the Shetland Islands was a frequent topic of discussion during interviews for this report. During the time period immediately after the spill through implementation of the new statutes, several key individuals, including Drue Pearce, Governor Cowper, and Mike Williams, took field trips across the globe to see firsthand what a major marine oil spill response system looked like outside of the U.S. What they observed helped to ground future discussions and counter some of the industry arguments that the proposed standards were not achievable.

Steve Cowper recollects quietly visiting Sullom Voe and talking with U.K. spill response experts about their standards, which he described as being “much more responsible” than anything in place in Alaska or the U.S. He credits this visit and the technical information gleaned by the Alaskan delegation as being important to ground truthing future discussions, and shutting down some of the counter-arguments that Alaska was setting the bar too high.<sup>51</sup>

Looking beyond the U.S. context can be extremely useful in evaluating oil spill response planning requirements, given that shipping is a global industry. While the Prince William Sound oil spill response system is often referenced as an example of world class response preparedness, there are other ports across the globe with comparable or more stringent standards in place.

<sup>51</sup> Personal communication with Steve Cowper, September 29, 2017.

## Transparency

The Cowper Administration and ADEC leadership are both to be credited for leveraging transparency as a way to hold Exxon and Alyeska accountable during the spill response. This in turn influenced a contingency planning process that is significantly more transparent than the federal process, and a response system that includes active participation from local stakeholders.

In the initial hours of the oil spill, Steve Cowper and Denny Kelso climbed a rickety ladder to board the *Exxon Valdez*, with fresh oil bubbling out of her hull. Their immediate reaction was “where is everybody?” and “why isn't anybody doing anything?” There were two boats on the water “towing boom in circles” while the spill gushed out, virtually unabated. The two flew from there to a community meeting in Valdez, where they began a campaign to share the “unvarnished truth” at every possible opportunity.

Occasionally, there would be press briefings or public meetings where Exxon and Alyeska would share information about where equipment was being sent. The state validated this with information gathered during their own overflights, and shared what they knew with the public, even if it didn't support Exxon's messaging.

When there was an extra seat on an overflight, the state brought a local fisherman or community leader along. At a community meeting early on in the spill, when somebody theorized that they would be more effective by getting the local fishing fleet out there with nets and buckets, the state provided the support to make it happen. Eventually, Alyeska/SERVS modeled a fishing vessel response program in its likeness, and the same program is still several hundred vessels strong.

One of the most important aspects of Alaska's oil spill contingency planning

regulations is the provision for public review of all planning documents. There are many regimes where contingency plans are kept out of the public realm, which can create a lack of trust and accountability. In Alaska, anyone who wants to understand what the Prince William Sound shipping companies, or any oil operator, plans to do in the event of a spill has the opportunity to read and – during public comment periods – provide feedback to industry and regulators.

## State and Federal Synergy

There is very little in the formal record to document the coordination between the legislative processes in Washington, D.C., and Alaska, but based on interviews with several of the firsthand participants, the two processes were closely linked.

Given the state/federal pre-emption lawsuits that have traditionally created tension between state and federal governments in the realm of tanker operations (e.g., *Chevron vs. Hammond*), it would not have been surprising if there had been discord between Alaska's efforts and those of the U.S. Congress. But Steve Cowper recalls just the opposite – he felt that Alaska was compelled to demonstrate to Washington that the state was doing everything in its power to fix the problems that the *Exxon Valdez* spill uncovered, and that there was an alignment of the parallel efforts.

Drue Pearce has a similar recollection, and noted that staffers from her committee were in frequent contact with their counterparts in D.C., sharing drafts of the Alaska bills as they were revised. She also recalls a strong link through U.S. Coast Guard leadership in Alaska and D.C.

Industry participants also had a stake in coordinating the state and federal efforts, and there was another level of communication and coordination among industry advocates in Juneau and Capitol Hill.

Stakeholders, activists, and the newly formed regional citizens advisory councils also took an active role in the regulatory process and in promoting public participation and informed debate throughout the process.

### Pride of Accomplishment

Individuals interviewed for this report included present and former politicians, legislators, industry representatives, technical experts, and ADEC staff. They each provided their reflections on the events they lived through during 1989-1991, and their perspectives shaped the narrative in this report.

There was one striking similarity across all interviews – each and every individual expressed a personal sense of pride in what had been accomplished. Most of the events that were discussed occurred over 25 years ago, and some details were harder to recall

than others. But without fail, each of these remarkable individuals – all of whom went on to have substantial success in their respective fields – looked back on HB 567 as a proud achievement and a highlight of their careers.

Mike Williams took the time to write an opinion piece for the Alaska Dispatch News on the 25<sup>th</sup> anniversary of the *Exxon Valdez* spill, reflecting back on the late nights at the Captain Cook Hotel as establishing the “core parameters of a 100-page plan that became the foundation of all modern spill response plans.” He continued, “During those two days at the Captain Cook Hotel in April 1989 I don't think any of us could have imagined that outcome.”

David Rogers, who many credit with closing the deal in the legislature, recalls a “beautiful experience” despite the high stakes and strong emotions.

## 7. Conclusion

This report collates the written record with personal recollections to describe the imperative behind Alaska's oil spill response planning standards.

On face value, the legislation itself paints a clear picture of the intent behind the oil spill planning and response law and the regulatory framework it created. In order to ensure an adequate capacity to respond to oil spills anywhere in Alaska, industry must equip, train, and exercise a system that can assure rapid and robust initial response, followed up by a long-term plan to bring in equipment and people to manage a worst case spill.

Nearly thirty years have elapsed since the *Exxon Valdez* oil spill, and the sense of urgency experienced in the days, weeks, and years spent cleaning up from that spill has faded from the collective memory. It is critical that future leaders, both in industry and government, remain cognizant of the

history that underlies the present oil spill contingency planning system. Alaska's response planning standard was a hard-won accomplishment of a diverse group in the wake of a life-changing disaster. If there is ever any question as to its value, one might imagine the fallout if a tanker were to run aground tomorrow, while a meager equipment pile lay frozen under 10 feet of snow.

## 8. Bibliography

The authors relied on substantial written documentation, much of which was accessed through the PWSRCAC archives.

Adkins, R. [Letter written on June 5, 1991]. *Comments on PWSRCAC letter dated April 22, 1991*. In PWSRCAC Archives. Anchorage, AK.

Adkins, R. [Letter written on June 5, 1991]. *Comments on WFA Letters dated May 13, 1991 and May 21, 1991*. In PWSRCAC Archives. Anchorage, AK.

Adkins, R. [Letter written on June 7, 1991]. *Re: Comments on letters dated May 13, 1991 and May 21, 1991*. In PWSRCAC Archives. Anchorage, AK.

Alaska Anvil, Inc., Chapter 4: Process Engineering. (1994). *HB 567 Compliance Submittal*. Retrieved from PWSRCAC Archives. Anchorage, AK.

Alaska Department of Environmental Conservation. (1991, November 12). *Responsiveness Summary, Public Comments on the July 8, 1991 Public Review Draft of Revised Oil Pollution Control Regulations*. In PWSRCAC Archives. Anchorage, AK.

Alaska Department of Environmental Conservation Implementation Workshop. (1991, March 26). *Kenai, Alaska Workshop*. In PWSRCAC Archives, Anchorage, AK.

Alaska Department of Environmental Conservation Implementation Workshop. (1991, March 28). *Seward, Alaska Workshop*. In PWSRCAC Archives, Anchorage, AK.

Alaska Department of Environmental Conservation. (1991, April 10). *HB 567 Technical Implementation Workgroup Meeting*. In PWSRCAC Archives, Anchorage, AK.

Alaska Department of Environmental Conservation. (1991, August 6). *Changes in Oil Spill Regulations, 18 AAC 75*. (Testimony of Wayne A. Helms). In PWSRCAC Archives. Anchorage, AK.

Alaska Department of Environmental Conservation. (1991, August 7). *Public Hearing on Proposed Revisions to Oil Pollution Control Regulations Transcript of Public Hearing*. In PWSRCAC Archives, Anchorage, AK.

Alaska Department of Environmental Conservation. (1991, January 24). *Draft HB 567 Regulations on Oil Spill Contingency Plans*. [Memorandum]. In PWSRCAC Archives. Anchorage, AK.

Alaska Department of Environmental Conservation. (1991, June 1). *HB 567 Regulations: PWSRCAC Oral Testimony*. In PWSRCAC Archives. Anchorage, AK.

Alaska Department of Environmental Conservation. (1991, June 20). *Untitled*. In PWSRCAC Archives, Anchorage, AK.

Alaska Department of Environmental Conservation. (1991, May 5). *HB 567 Workgroup Meeting*. In PWSRCAC Archives, Anchorage, AK.

Alaska Department of Environmental Conservation. (1991, September 25). *HB 567 Policy Issues*. In PWSRCAC Archives. Anchorage, AK.

Alaska Department of Environmental Conservation. (1991). *DEC Outlines HB 567 Spill Response Regulations Review* [Press Release]. In PWSRCAC Archives. Anchorage, AK.

Alaska Department of Environmental Conservation. [Letter written February 15, 1991]. *Cover Letter for Public Input on HB 567*. In PWSRCAC Archives. Anchorage, AK.

Alaska Department of Environmental Conservation. [Letter written March 4, 1991]. *Draft letter to Contingency Plan Holders*. In PWSRCAC Archives. Anchorage, AK.

Alaska Department of Environmental Conservation. [Letter written March 8, 1991]. *Letter to Tim Robinson on HB 567 Regulatory Requirements*. In PWSRCAC Archives. Anchorage, AK.

Alaska Department of Environmental Conservation, (1991). *Sectional Analysis: Draft HB 567 Oil Spill Contingency Plan Regulations*. In PWSRCAC Archives. Anchorage, AK.

Alaska Oil and Gas Association. (1991, August 6). *Alaska Oil and Gas Association (AOGA) Comments on Proposed Regulations 18 AAC 75 Oil and Hazardous Substances Pollution Regulations Public Testimony*. In PWSRCAC Archives, Anchorage, AK.

Alaska Senate Oil and Gas Committee. Robertson, T. (1990, March 7). *SB 504 Regulations: Tim Robertson Oral Testimony*. In PWSRCAC Archives. Anchorage, AK.

Alaska Statute 46.04.020. Powers of the Department.

Alaska Statute 46.04.030. Oil discharge prevention and contingency plans.

Alaska's 16th Legislature. (1990, February 26). *House Resources Committee*. In PWSRCAC Archives. Anchorage, AK.

Alaska's 16th Legislature. (1990, May 2). *Senate Special Committee on Oil and Gas*. PWSRCAC Archives. Anchorage, AK.

Alaska's 16th State Legislature. (1990). *HB 0567*.

Baldwin, R.C. [Letter written on February 10, 1994]. *Re: Alyeska compliance with HB 567 Response Planning Standards*. In PWSRCAC Archives. Anchorage, AK.

Banta, J. Copeland, T. and Robertson, T. (1994). *The Citizens perspective of spill response*. Oil Spill Conference, 1994.

BP Exploration (Alaska) Inc. (1991, August 6) *Initial Comments on Proposed Oil and Hazardous Substances Pollution Control Regulations*. [Meeting Handout]. In PWSRCAC. Anchorage, AK.

Cameron, J. R. (1994). *The States/British Columbia Oil Spill Task Force*. Oil Spill Conference, 1994.

Conway, M.A. [Letter written on May 18, 1992]. *Alaska Department of Environmental Conservation response to letter from M.F.G. Williams*. In PWSRCAC Archives. Anchorage, AK.

Cooper, L. I. (1991). *Law: Part 1: Clean Water Act, Coastal Zone Management Act, And the Safe Drinking Water Act*. Research Journal of the Water Pollution Control Panel. Volume 63, No. 4. Retrieved from: [http://www.jstor.org/stable/25044000?seq=1&loggedin=true#page\\_scan\\_tab\\_contents](http://www.jstor.org/stable/25044000?seq=1&loggedin=true#page_scan_tab_contents)

Dietrick, L. (1991, February 12). *Alyeska's Comments on Draft H.B. 567 Regulations*. Alaska Department of Environmental Conservation Memorandum. In PWSRCAC Archives. Anchorage, AK.

ECO Engineering, Inc. (1991). *Task Two: Development of Realistic Maximum Oil Discharge Criteria*. In PWSRCAC Archives. Anchorage, AK.

HB 567 Work Group (1991, March 19-20). *Minutes*. PWSRCAC Archives, Anchorage, AK.

HB 567 Work Group (1991, March 19). *HB 567 Work Group Meeting Notes*. In PWSRCAC Archives, Anchorage, AK.

HB 567 Work Group. (1991, April 8). *HB 567 Work Group Meeting Day One Notes*. In PWSRCAC Archives, Anchorage, AK.

HB 567 Work Group. (1991, April 9). *Meeting Notes HB 567 Work Group*. In PWSRCAC Archives,

Anchorage, AK.

HB 567 Workgroup. (1991, December 6). *Meeting Notes*. PWSRCAC Archives. Anchorage, AK.

HB 567 Workgroup. (1991, May 5). *HB 567 Workgroup Meeting Notes*. In PWSRCAC Archives. Anchorage, AK.

HB 567 Working Group. (1991, August 14-15). *Notes from HB 567 Working Group Meeting*. In PWSRCAC Archives. Anchorage, AK.

HB 567 Working Group. (1991, June 25). *HB 567 Meeting Notes*. PWSRCAC Archives. Anchorage, AK.

Herman, B. (1994). *Screening for Acceptable Risk*. Oil Spill Conference, 1994.

Kent, L. (1991, September 25). *Policy Issues Paper from the Commissioner*. Alaska Department of Environmental Conservation Memorandum. In PWSRCAC Archives. Anchorage, AK.

Levine, R. A. [Letter written October 1, 1993]. *To Robert C. Flint Re: Compliance with 18AAC75*. In ADEC Public Records.

Levshakoff, M. and Parsons, M. (2012, February). *Alyeska Pipeline & SERVS*. SFC Meeting. In PWSRCAC ARCHIVES. Anchorage, AK.

Lindstedt-Siva, J. (1991). *U.S. Oil spill policy hampers response and hurts science*. Oil Spill Conference. San Diego, California, 1991.

Mertz, D. (2014). *Oil spill response planning standards for contingency plans: Why the legislature enacted the law in 1990 and its importance today*. In PWSRCAC Archives. Anchorage, AK.

O'Connor, K. M. *Alaska Department of Natural Resources response to HB 567 Policy Issue Paper by Department of Environmental Conservation*. [Memorandum written on October 17, 1991]. In PWSRCAC Archives. Anchorage, AK.

Oil and Other Hazardous Substances Pollution Control Act. 18 AAC 75 (2017)

Oil Discharge Prevention and Contingency Plan Requirements, AK CSHB 567 (June 26, 1990).

Parker, W. B. (1994). *A research program to ensure that best available technology is used in preventing and responding to oil spills in Alaska and the North Pacific*. Oil Spill Conference, 1994.

Pearson, L. A. (1994). *Development of Technology Protocols for Oil and Hazardous Substance Spill Response Appropriate for the State of Alaska*. Oil Spill Conference, 1994.

Prince William Sound Contingency Plan Steering Committee. (1991, March 26). *Prince William Sound Contingency Plan Steering Committee (PWSCPSC)*. PWSRCAC Archives. Anchorage, AK.

Prince William Sound Regional Citizen's Advisory Council. (2014). *Recommendations to Alaska's Best Available Technology Requirements for Prince William Sound Crude Oil Tankers and Valdez Marine Terminal Oil Spill Prevention and Response*. In PWSRCAC Archives. Anchorage, AK.

Prince William Sound Regional Citizens Action Council. (1991, August 2). *Draft HB 567 Resolutions, Longer Version of the Resolution*. In PWSRCAC Archives. Anchorage, AK.

Prince William Sound Regional Citizens Action Council. (1991, August 2). *HB 567 Issues List*. In PWSRCAC Archives. Anchorage, AK.

Prince William Sound Regional Citizens Advisory Council. (1991, June 1). *Are we Ready for the Next One?* In PWSRCAC Archives. Anchorage, AK.

Prince William Sound Regional Citizens Advisory Council. (1991). *HB 567 Highlights*. In PWSRCAC

Archives. Anchorage, AK.

Prince William Sound Regional Citizens Advisory Council. (2014). *Alaska's Best Available Technology (BAT) Requirements for Prince William Sound Crude Oil Tankers and Valdez Marine Terminal Oil Spill Prevention and Response*. In PWSRCAC Archives. Anchorage, AK.

Resource Analysts. (1992, May 18). *Summary of 5/14/92 Oil & Hazardous Substances Pollution Control Contingency Plan Workshop*. In PWSRCAC Archives. Anchorage, AK.

Richardson, J.G. [Letter written on April 24, 1995]. *Alyeska Pipeline Service Company response to PWSRCAC Letter of questions*. In PWSRCAC Archives. Anchorage, AK.

Robertson, T. (1991, February 13). *Re: Juneau Trip*. Memo received by HB 567 Workgroup. In PWSRCAC Archives. Anchorage, AK.

Robertson, T. [Letter written on January 28, 1992]. *To Mike Manaker Re: HB 567 Regulations*. In PWSRCAC Archives. Anchorage, AK.

Rogers, D. (1991, May 2). *Draft Financial Responsibility Regulations Memorandum*. In PWSRCAC Archives. Anchorage, AK.

Rogers, D. E., (1991) *Memorandum Re: HB 567*. In PWSRCAC Archives. Anchorage, AK.

Santarpio, C. (2013). *From lapdog to Watchdog: Giving Citizens a Voice in Monitoring the Oil Industry Through PWSRCACs*. Boston College Environmental Affairs Law Review. Vol 40 (1). Retrieved from: <http://lawdigitalcommons.bc.edu/ealr/vol40/iss1/8>

State of Alaska. (1990, February 26). *House Resources Committee*. PWSRCAC Archive, Anchorage, Alaska.

State of Alaska. (1990, May 2). *Senate Special Committee on Oil and Gas*. PWSRCAC Archive, Anchorage, Alaska.

State of Alaska. Alaska Oil Spill Commission. (1990). *Spill: The Wreck of the Exxon Valdez—Implications for Safe Transportation of Oil*. (GC 1552.P75).

Sterling, S. (1991, February 13). *Re: Legislative Agenda and Tim's Juneau Report*. Memo received by HB 567 Workgroup. In PWSRCAC Archives. Anchorage, AK.

Stolls, A. (1993). *Oil spill legislation in the coastal United States since the Oil Pollution Act of 1990*. Oil Spill Conference, Tampa, Florida, 1993.

Tennyson, E.J. and Whittaker, H. (1989). *The 1987 Newfoundland Oil Spill Experiment*. Oil Spill Conference, 1989, San Antonio, Texas, 1989.

Testimony Summary. (1991). *Anchorage: Prince William Sound Regional Citizens Advisory Council*. In PWSRCAC Archives. Anchorage, AK.

US Department of Interior, Bureau of Safety and Environmental Enforcement and Genwest Systems, Inc. (2016). *Estimated System Recovery Potential (ESRP) Calculator User Manual*.

Wang, H., Ren, J., Wang, J., Yang, J. (2014). *Developing a conceptual framework to evaluate effectiveness of emergency response system for oil spill*. Journal of Traffic and Transportation Engineering Volume 1 (2) pp120-128.

Weiwei, J., Wei, A., Yupeng, Z., Zhaoyu, Q., Jianwei, L., & Shasha S. (2015). *Research on Evaluation of Emergency Response Capacity of Oil Spill Emergency Response Vessels*. Aquatic Procedia. Volume 3, pp. 66-73.