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STATE OF WASHINGTON

Review of Procedures Involved in the Near Term Transportation  
of High-Level Radioactive Materials

A REPORT TO THE GOVERNOR

July 15, 1986

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**Near Term High-Level Nuclear Waste**

**Transportation Review Working Group**

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## TABLE OF CONTENTS

Introduction . . . . .	1
Study Procedure and Chronology of Meetings . . . . .	2
Development of the Principles of Understanding . . . . .	4
Public Concerns. . . . .	6
Federal and State Involvement in the Shipment of Radioactive . . . . .	9
Materials	
Federal Responsibilities. . . . .	9
State Responsibilities . . . . .	11
Findings & Conclusions. . . . .	13
Appendices	
A.    Acronymns. . . . .	16
B.    Washington State Draft Principles of Understanding . . . . .	17
C.    USDOE Draft Principles of Understanding. . . . .	22

## INTRODUCTION

Governor Booth Gardner, on January 15, 1986, requested a review of the plans, policies and procedures for the near-term transportation of high-level nuclear waste into and through the state of Washington. The intent of the review was to identify any risks to the public health and safety that may result and seek their resolution.

The Governor appointed Curtis Eschels, Chairman of the Energy Facility Site Evaluation Council (EFSEC), to be the senior member of the state review group and asked that members of EFSEC with augmentation by representatives from key state agencies assist with this project.

The state review group was to focus on current concerns, primarily the United States Department of Energy's (USDOE) planned shipments of radioactive materials crossing the state destined for various USDOE research laboratories. The state was invited by the Richland Operations Office, USDOE, to enter into a Principles of Understanding that would cover USDOE's transportation of spent fuel. The intent of the agreement was to set forth comprehensive guidelines that were satisfactory to both the state and USDOE.

The review was different in both scope and purpose from the ongoing work of the Washington State Nuclear Waste Board (NWB) that is studying the transportation impacts that may result from the possible siting of a permanent repository for spent fuel and high-level radioactive waste at the Hanford Reservation. The NWB also is studying transportation aspects of permanent disposal of the high-level defense waste currently stored on the reservation.

For clarity and brevity throughout the report, the state review group uses the generic term "radioactive materials" to include: nonclassified high-level radioactive waste, spent fuel and other highway route controlled quantities of nuclear materials. The transportation requirements for low-level waste, radiopharmaceuticals and special form materials were not reviewed.

The review continued through mid-June when it was summarily terminated by USDOE. The background for the termination is discussed in the following report.

## STUDY PROCEDURE AND CHRONOLOGY OF MEETINGS

One of the first steps undertaken by the state review group was to invite representatives from federal and local government: The Federal Emergency Management Administration (FEMA), the United States Coast Guard (USCG), the United States Department of Transportation (USDOT), the Association of Washington Cities, the Washington State Association of Counties, the cities of Seattle and Tacoma, counties of King and Pierce, the Washington State Association of Fire Chiefs, the Port authorities of Seattle and Tacoma and affected Indian tribes.

Preliminary activities focused on organizing the state/federal working group, broadening participation and providing for public input. The state review group's plans called for full public involvement in developing the Principles of Understanding with USDOE. Five public meetings were proposed to review the final draft in Seattle, Vancouver, Tacoma, Richland and Spokane.

The state review group met on a weekly basis and held monthly meetings with USDOE. The first meeting with USDOE was on January 27, 1986 where the joint federal/state review group reviewed a document listing the state's conditions for the safe handling and transportation of foreign spent fuel shipments that had been announced by USDOE during the fall of 1985.

On February 19, 1986 the state review group and several representatives of local government visited the Hanford Reservation where they heard presentations on shipping cask testing and qualification programs, high-level waste control procedures, and emergency response and training. The group inspected a Nuclear Regulatory Commission (NRC) certified cask and talked to design engineers about maintenance and inspection practices.

The general public was involved on February 27, 1986 when the state review group chaired a meeting at Seattle-Tacoma International Airport with representatives of USDOE's Savannah River Operations Office (SRO) to discuss the foreign spent fuel shipments. Members of the SRO briefing team returned to Seattle early in March to meet with the executive board and general membership of the International Longshoremen's and Warehousemen's Union (ILWU), Local 19.

On April 30, 1986 the state review group, including ILWU and Seattle Fire Department representatives, were briefed in Seattle by USCG on the Puget Sound Vessel Traffic Service and the capability of USCG to inspect vessels containing spent fuel. That same day the state review group visited the Port of Tacoma.

The state review group continued to meet regularly throughout the project. The final federal/state meeting was held on June 2, 1986 and the final state meeting was held on June 26, 1986. Members of the state review group assisted with the report writing.

## DEVELOPMENT OF THE PRINCIPLES OF UNDERSTANDING

The state entered the negotiations with USDOE on the Principles of Understanding with a list of conditions that had been developed to ensure that the shipments of foreign spent fuel would be carried out safely and with full protection of Washington's citizens and environment. The state's list of conditions addressed the need for advance notification, use of NRC certified containers, coordination on routes, adequate safety protection, ongoing communications, liability, and entry radiological and equipment inspections by state agencies. The state review group proposed that many of those conditions would be appropriate to the Principles of Understanding.

A precedent to the Principles of Understanding already existed with another state. In 1980 USDOE had executed an agreement with the state of South Carolina regarding the transportation of high-level and low-level radioactive wastes. This USDOE/South Carolina agreement contained resolutions to many of the same issues concerning Washington.

The first draft of the proposed Principles of Understanding prepared by USDOE, while based on the South Carolina document, was less comprehensive omitting many of the guidelines the state review group was seeking. In the following months, discussions focused on including some of the same provisions as those in the agreement with the state of South Carolina. The state review group recommended incorporating the conditions for foreign fuel shipments and other radioactive materials in the Principles of Understanding in order to draft a more comprehensive document.<sup>1</sup> Discussions continued during the review period, but it became clear that USDOE was reluctant to enter into such a broad agreement with the state of Washington.

At the conclusion of the April 4, 1986 joint meeting with USDOE, a number of central issues in the Principles of Understanding remained unsettled. The scope of the agreement had been reduced by USDOE from the state submitted wording, "nonclassified high-level radioactive waste, spent fuel and other highway route controlled quantities of nuclear materials" to "nonclassified spent fuel". The provisions of the liability statement and notification procedures in USDOE's proposal were unclear. The definition of responsibility in the case of an accident remained vague and gave few assurances of USDOE's

<sup>1</sup>See Appendix B - Washington State Draft Principles of Understanding

responsibilities to the state's citizens. USDOE continued to assure the state review group that it intended to pursue a mutually agreeable document.

At a subsequent meeting on June 2, 1986, USDOE distributed a revised draft copy of the Principles of Understanding which still omitted the provisions requested by the state review group.<sup>2</sup> USDOE staff announced they were experiencing an indefinite delay because of the need to coordinate the document through its headquarters but wished to continue the negotiations and would consider future funding for the project.

With no foreseeable resolution within the specified six month time frame, the state review group decided on June 9, 1986 to prepare the final report to the Governor without the Principles of Understanding, but to include a recommendation that negotiations should continue.

On June 19, 1986, the Chairman of EFSEC received a letter from USDOE proposing that negotiations continue with NWB within the parameters of the Consultation and Cooperation agreement as specified in the Nuclear Waste Policy Act. NWB is studying the many long-term issues regarding Washington's possible designation as a permanent repository for high-level radioactive waste. USDOE said the draft Principles of Understanding given to the state review group on June 2, 1986 were to serve as "general operational guidance for shipments of non-classified spent fuel to, from and through the state of Washington".

The state review group advised USDOE on June 20, 1986 that there was no intent to halt the process to develop the Principles of Understanding, and expressed reservations about using USDOE's proposed draft as general operational guidance. The state viewed USDOE's proposal to transfer the activity to NWB as a needless extension to solving an immediate problem and advised that satisfactory closure of the Principles of Understanding could have been achieved if the parties had resumed discussions.

<sup>2</sup>See Appendix C - USDOE Draft Principles of Understanding



## PUBLIC CONCERNS

Three federal agencies, USDOE, FEMA and NRC estimate there are between two million five hundred thousand and three million shipments of radioactive materials moving across the United States annually. If all states shared equally in these movements, Washington's share could be five thousand shipments each month. Because of the state's coastal position, the location of the Hanford Reservation and the Idaho National Engineering Laboratory, the potential appears great that the actual number of shipments would exceed five thousand. Whereas the majority of these shipments are expected to contain only small amounts of radioactivity, it is the high-level wastes which are a major concern and present a significant health hazard to specific organs if taken into the body.

The reality of high-level nuclear waste in the form of foreign spent fuel transiting the state of Washington provided a focus for public concern on the transportation issue. In the fall of 1985, there was immediate public reaction when the state learned that USDOE planned to ship spent reactor fuel rods through either the ports of Seattle or Tacoma, across the state and on to its SRO in South Carolina for reprocessing. The Governor, Washington's congressional delegation, local government, citizen groups and the longshoremen all opposed the proposed shipments.

According to USDOE plans, the casks containing the spent fuel would be shipped as containerized vessel cargo and transferred to a common motor carrier as early as March 1986. Subsequently, the state was informed by USDOE that Long Beach had been chosen as a Port of Entry, but Seattle remained a Port of Transit and an alternative Port of Entry. In any event, the foreign spent reactor fuel would transit Washington's waters and the state recognized that without more information from USDOE there would be inadequate preparation to cope with an emergency.

Governor Gardner, on February 7, 1986, advised USDOE that the citizens of Washington State are especially sensitive to radioactive waste matters. He said USDOE must satisfy the state that USDOE has complied with federal laws designed to protect public health and safety. Specifically, he questioned compliance with the Coastal Zone Management Act and the Nuclear Non-Proliferation Act, licensing by NRC and consistency with the National Environmental Policy Act.

Washington State's congressional delegation sent letters of protest to USDOE regarding the proposed shipments of spent fuel rods. Similar action was taken by units of local government. Letters of protest were also filed by the Governor of California and the city of Long Beach. USDOE made similar replies to all correspondence stating that the proposed shipments were in compliance with federal laws and had met all legal requirements.

The Northwest Inland Water Coalition, comprised of members of the Sierra Club, Greenpeace and other organizations, filed a complaint in the Ninth Circuit Court of Appeals on March 12, 1986 seeking a declaratory judgment and injunctive relief from the proposed spent fuel shipments. The cause for this suit was based on the following allegations: 1) USDOE did not prepare an Environmental Impact Statement (EIS) as required by the National Environmental Policy Act; 2) USDOE failed to adhere to the mandates of the Atomic Energy Act; 3) USDOE violated terms of the "Agreement for Cooperation" with the government of Canada; and 4) USDOE unlawfully applied the Price-Anderson Act. The state of Washington, on June 27, 1986, filed an amicus curiae brief in the suit emphasizing that the ecological fragility of Puget Sound waters and the potential impacts on the welfare of Washington's citizens requires the preparation of a site-specific EIS.

ILWU-Local 19 voted unanimously on January 19, 1986 not to work the vessels entering Puget Sound waters carrying spent fuel. ILWU has urged USDOE to consider the all-water route to the east coast via the Panama Canal and expressed concerns about the particular vulnerability of longshoremen coming in direct contact with contaminated radioactive cargo. ILWU cited a lack of specifics in USDOE's proposed transportation program and raised concerns about the timing of emergency response should there be an accident at the container terminal. According to ILWU, under the terms of the Pacific Coast Marine Safety Code, the employers are committed to informing the longshoremen of hazardous materials on board an incoming vessel. ILWU advised the state review group that cargo information is not always readily available and information received from USDOE and the shipping agency was confusing.

An unexpected development during the state review group's study was notification of the number of shipments of radioactive materials offloaded in the Port of Seattle. Seattle Mayor Charles Royer, in a letter to Governor Gardner dated April 30, 1986, submitted a

list of twenty-four shipments of radioactive materials transiting Seattle from 1980 to the present time. Mayor Royer advised that the Seattle Fire Marshal requires formal notification within twenty-four hours whenever potentially hazardous materials are unloaded in the port and enforces the program through harbor permits. When notified the Seattle Fire Department officers inspect radioactive cargo. For shipments violating federal standards, the assistance of the Washington State Departments of Social and Health Services (DSHS) and Ecology (WDOE) is requested. Mayor Royer recognized that the city's notification requirements do not monitor all shipments and that no inspection is required for materials remaining on board ship. He noted that no isolation area for contaminated shipments exists.

Because of the lack of information concerning these Seattle shipments the Chairman of the state review group, in letters to USDOE and NRC dated May 8, 1986, requested detailed information concerning the nature of these shipments, their origin and destination, and the specifics of the radioactive materials. Both USDOE and NRC have advised they have no information concerning the Seattle shipments.

## FEDERAL AND STATE INVOLVEMENT IN THE SHIPMENT OF RADIOACTIVE MATERIALS

### Federal Responsibilities

The regulation of radioactive materials transportation is primarily a federal responsibility. Four principal agencies are involved in roles that vary according to the origin, ownership, and carrier of the waste material shipped. These include FEMA, NRC, USDOE and USDOT.

The roles of these agencies for transportation of radioactive materials can be generally defined as the following:

**FEMA:** Assists federal and state agencies in developing emergency response plans; and  
Coordinates federal agency emergency response in the event of an accident.

**NRC:** Establishes cask requirements;  
Licenses casks;  
Establishes all standards for Type B packaging;  
Establishes safeguard requirements to prevent sabotage of shipments;  
Approves shipment routes for spent fuel; and  
Requires advance notification of shipments to states.

**USDOE:** Takes title to foreign spent fuel at the reactor;  
Provides casks for waste transport;  
Makes all shipping arrangements;  
Collects disposal fees from the waste owners and generators;  
Regulates its transportation contractors;  
Assists state and local governments in responding to transportation emergencies; and  
Sponsors emergency response training.

**USDOT:** Regulates carriers of radioactive materials;  
Regulates the conditions of transportation routing, handling and storage, vehicle requirements and driver qualifications;  
Establishes requirements for labeling and marking packages and placarding vehicles; and  
Establishes standards and specifications for Type A packaging.

NRC is responsible for establishing standards for transportation, cask design and certification. The casks are the Type B packaging in which high-level radioactive materials must be shipped. NRC standards for casks (10 CFR part 71) are intended to prevent loss or dispersion of the radioactive contents, provide for adequate shielding and heat dissipation, and prevent "nuclear criticality", the point at which a self sustaining nuclear reaction occurs.

NRC and USDOT regulations also set standards for radiation exposure on the outside of a loaded shipment cask, a maximum radiation exposure at ten millirems per hour at two meters from the transport vehicle. NRC licensing also requires specification of a cask maintenance program. Each cask must be inspected prior to its first use. Visual inspections and other tests check for leakage, examine radiation shielding and confirm the integrity of cask parts, such as valves and gaskets.

USDOE, as shipper of research and defense radioactive wastes, is not an NRC licensee and not subject to these regulations. USDOE has agreed to use packaging that has been evaluated, approved and certified against standards equivalent to those enforced by NRC. USDOE and NRC have further agreed that shipments under the Nuclear Waste Policy Act, including research shipments in 1986-87, will be in casks that are licensed and certified by NRC, not by USDOE.

NRC requires licensees to notify affected state governors or their designees before shipping nuclear waste across state lines. The notification includes name and address of shipper, carrier and receiver; description of material; listing of routes to be used within the state; and estimated periods of arrival at state boundaries. Notification delivered by mail must be postmarked at least seven days before transport. This program of advance notification has worked satisfactorily. However, these prenotification requirements do not apply to any USDOE shipments. For these shipments, USDOE periodically sends each affected state a generic pamphlet describing the types of materials and packaging. Neither routes, arrival dates, nor the specifics of the radioactive materials are given.

USDOT regulations, under the Hazardous Materials Transportation Act, require highway carriers of designated radioactive materials and other dangerous cargoes to use the most direct interstate highway route available and avoid large cities where an interstate route can be used. A state may designate routes to replace or supplement the interstate route

under certain conditions. There are no similar routing requirements for rail or barge transportation. USDOT has requirements governing driver training, shipping papers, marking, labeling and placarding. Under USDOT regulations, the shipper must package and label the radioactive materials prior to delivery to a carrier for transport.

#### State Responsibilities

A number of Washington State agencies are involved with radioactive materials transportation. The State Patrol (WSP) has significant responsibilities concerning both hazardous materials and motor vehicle safety. The Washington Utilities and Transportation Commission (WUTC) has jurisdiction over motor carrier safety aspects of highway transport, and has sole jurisdiction over the inspection of rail transporting equipment. The Division of Emergency Management in the Department of Community Development (DCD) develops coordinated emergency response plans among the state agencies and also serves as the state's point of contact in the event of a transportation accident involving hazardous materials. The Office of Radiation Protection of the Department of Social and Health Services (DSHS) inspects shipments for compliance with state and federal regulations and responds to incidents in which there may be releases of radioactive materials. The Chairman of EFSEC is the Governor's designee under NRC regulations to receive notification of NRC regulated shipments of nuclear waste.

Depending upon circumstances WSP, city and county law enforcement, and local government fire protection agencies could be first responders to any accident involving radioactive materials. WUTC and WSP have somewhat similar responsibilities for vehicle safety inspections, and both DSHS and WSP possess the capability to perform radiological monitoring. The agencies are aware of the potential for problems because of these overlapping responsibilities.

There is no source of dedicated funds for the support of all these activities. Agency monies to support inspection and enforcement activities are received from the state general fund. Each of the agencies involved with the transportation of radioactive materials expressed concern about any expansion of responsibilities without supplemental funding.

Under Washington State regulations, the transportation of radioactive materials is to be conducted in compliance with the rules and regulations of USDOT, Title 49 CFR parts 170 through 189 which regulate the packaging, marking, labeling, documentation and handling of all radioactive materials with specific activities greater than 0.002 microcuries per gram. Specific activities less than the above are designated "below regulatory concern". Each responsible state agency has adopted rules for the transportation of radioactive materials.

The authority for route designation of hazardous materials lies with the Chief of WSP. Two ports of entry at Plymouth and Spokane have been established under this authority for the transport of low-level radioactive waste to Hanford. Similar provisions do not apply to radioactive materials under the jurisdiction of USDOE. There are no state regulations for radioactive materials arriving by ship or barge.

## FINDINGS AND CONCLUSIONS

### 1. Finding:

The state review group found an awareness throughout federal, state and local government that the transportation of radioactive materials requires special precautionary measures. Provisions for emergency response, special packaging, advance notification, ability to perform radiological inspections, and public education are essential. The cities of Seattle and Tacoma, the state DSHS, DCD, WSP, WDOE and WUTC, and federal USDOT, USDOE, and NRC have developed adequate procedural guidance for the packaging, handling, inspection, security and transportation of radioactive materials. Each segment of governmental activity understands its role. However, a comprehensive plan integrating one activity with the other for the movement of foreign spent fuel into and through the state of Washington and its waters does not exist.

#### Conclusion:

A planning initiative must be undertaken to develop a master plan coordinating the activities of the federal, state and local governmental agencies involved in the safe handling and transportation of radioactive materials in order for the state to declare that adequate precautionary measures exist.

### 2. Finding:

The state review group found that the negotiations on a proposed Principles of Understanding were productive and were leading to an objective initially viewed as desirable by both parties. The state has expressed the opinion that closure on an agreement could have been achieved that would regulate the shipments of certain radioactive materials in the near term.

#### Conclusion:

It is mutually beneficial to USDOE and the state of Washington that the negotiations on the proposed Principles of Understanding be renewed. There is nothing to be gained by either party by further delay. There is much to be gained by negotiating



an agreement for the handling and transportation of radioactive materials that is acceptable to all concerned.

3. Finding:

The state review group found that vessels carrying radioactive materials may enter the waters of the state of Washington without any advance notification or requirement that the vessel be certified free of radioactive contamination.

Conclusion:

Vessels carrying radioactive cargo, which could present a hazard to the environment and health of the crew or dockside personnel, should notify the Captain of the Port, USCG, of the nature of the cargo. In order to determine that the radioactive cargo is free of contamination the vessel officers should be trained to make radiological surveys and have operable hand held monitoring equipment on board.

4. Finding:

The state review group found that USCG in Seattle inquires if incoming vessels are carrying hazardous cargo, but makes no inquiry about radioactive materials. USCG in Seattle is not trained to make radiological surveys of cargo and possesses no monitoring equipment.

Conclusion:

USCG should be asked to review its operating procedures to determine the feasibility of inquiring if vessels in state waters are carrying radioactive cargo and the nature of that cargo. USCG should be asked to determine the feasibility of conducting radiological surveys of radioactive cargo where the degree of contamination is unknown.

5. Finding:

The state review group found that no isolation area for vessels containing contaminated radioactive material cargo had been designated in Puget Sound and that no areas for the temporary storage of contaminated cargo had been designated.

Such designations are considered necessary for the decontamination of vessels and cargo.

**Conclusion:**

The designation of holding areas for contaminated vessels and cargo should be established and coordinated with those agencies responsible for decontamination practices.

**6. Finding:**

The state review group found that according to federal authorities there could be as many as 5000 shipments of radioactive materials through the state of Washington each month. However, the data supporting these shipments does not exist nor does information to identify the nature of the materials, their source, or destination.

**Conclusion:**

It is necessary to establish the extent and nature of the movement of radioactive materials through the state in order to address the question of adequate protection. A one time survey of USDOE and all state and federal licensees who possess or ship radioactive materials would provide the state with useful information concerning the magnitude of these shipments.

**7. Finding:**

The state review group found that most enforcement and regulatory agencies are either unfunded or inadequately funded to provide additional resources, personnel and equipment, in order to ensure an improved capability for the safe handling and transportation of radioactive materials.

**Conclusion:**

An analysis is required to determine the adequacy of existing funding mechanisms to provide the resources that may be required to ensure safe and efficient handling and transportation of radioactive materials. For those radioactive materials which present an unusual threat to the citizens there may be a need to develop special funding programs to compensate for the apparent hazard.

## ACRONYMS

DCD - Department of Community Development  
DSHS - Department of Social and Health Services

EFSEC - Energy Facility Site Evaluation Council  
EIS - Environmental Impact Statement

FEMA - Federal Emergency Management Administration

ILWU - International Longshoremen's & Warehousemen's Union

NRC - Nuclear Regulatory Commission  
NWB - Washington State Nuclear Waste Board

SRO - Savannah River Operations Office

USCG - United States Coast Guard  
USDOE - United States Department of Energy  
USDOT - United States Department of Transportation

WDOE - Washington State Department of Ecology  
WSP - Washington State Patrol  
WUTC - Washington State Utilities and Transportation Commission

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Revision 5/April 30, 1986

## PRINCIPLES OF UNDERSTANDING

WHEREAS, The U. S. Department of Energy (USDOE)<sup>1</sup> and the state of Washington (STATE) each recognize the need for the safe handling, transportation and storage of radioactive materials into, out of, or within the STATE and its waters;<sup>2</sup> and

WHEREAS, Each recognize the involvement of many federal and state agencies to effect such safe handling, transportation and storage; and

WHEREAS, Each recognize the advantages of formalized procedures for state and federal cooperation and handling of these shipments; and

WHEREAS, Each recognize that the procedures for coordination and handling of these shipments should be commensurate with the number of expected shipments as well as with the potentially hazardous characteristics of the materials being shipped;

NOW, THEREFORE, In the spirit of mutual cooperation, USDOE and the STATE consider the following voluntary principles meet both parties' interests in ensuring the safe transportation of non-classified high-level radioactive waste<sup>3</sup> and spent fuel,<sup>4</sup> and shall work to develop a similar agreement applicable to other highway route controlled quantities of nuclear materials:

<sup>1</sup>The term "DOE" includes contractors whose activities in handling radioactive materials are controlled by USDOE and are not licensed by the Nuclear Regulatory Commission (NRC).

<sup>2</sup>The term "waters" includes those navigable and marine waters, specifically the straits of Juan De Fuca, Puget Sound and Columbia River.

<sup>3</sup>The term "high-level radioactive waste" means: A) the highly radioactive material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations; and B) other highly radioactive material that the Commission, consistent with existing law, determines by rule requires permanent isolation.

<sup>4</sup>The term "spent nuclear fuel" means fuel that has been withdrawn from a nuclear reactor following irradiation, the constituent elements of which have not been separated by reprocessing.

A. GENERAL PRINCIPLES RELATED TO THIS AGREEMENT

The following principles apply to all shipments of non-classified high-level radioactive waste, spent fuel, and other highway route controlled quantities of nuclear materials by or for USDOE, which enter, leave or travel within the STATE and its waters.

1. USDOE and the STATE agree, in good faith, to notify each other regarding any change in policy affecting these Principles.
2. These Principles shall not apply to classified shipments of high-level radioactive waste, spent fuel or other highway route controlled quantities of nuclear materials.
3. Nothing in this agreement shall be construed to limit, repeal, or in any manner modify the existing legal rights, privileges, and duties of the parties hereto as provided by contract, agreement, statute, or any other law, regulations, or applicable court decisions.
4. The Principles of Understanding shall continue for a period of five years from the latest date of signature of either party and may be renegotiated for extensions upon the agreement of both parties. The Principles of Understanding may be terminated by either party by written 60-day advance notice to the other party.

B. PRINCIPLES APPLICABLE TO ALL SHIPMENTS

The following principles are applicable to shipments of non-classified high-level radioactive waste, spent fuel, or other highway route controlled quantities of nuclear materials by or for USDOE which leave, or travel within the STATE and its waters.

1. USDOE shall ensure all shipments are packaged in NRC certified containers and that each shipment complies with applicable federal and state regulations and orders.
2. USDOE shall avoid using liquid cooled casks without consultation with the State.
3. USDOE agrees that no shipments shall be transported by air within the air space above the STATE or its waters without consultation with the state.
4. With respect to shipments traveling by motor vehicles STATE officials shall have the right to inspect: 1) the cask and any container or overpack for compliance with federal radiation standards; 2) vehicles and trailers for vehicle safety; 3) evidence of driver qualifications including license, health certificate, and log book; and 4) loading/unloading at points agreed upon by USDOE and the STATE.

With respect to shipments traveling by rail USDOE shall make the necessary arrangements to enable STATE inspection at the point of departure, and shall provide the STATE with the information necessary for the STATE to arrange inspections at points of inter-modal transfer or switching locations within the STATE. These STATE inspections shall include: 1) the casks and any container or overpack for compliance with radiation standards, and 2) rail car position and components.

For shipments traveling by water-born vessel or barge USDOE shall make the necessary arrangements to enable STATE inspection at the first port-of-call, or when the vessel takes on a pilot, whichever comes first. These STATE inspections shall include the casks and any containers or overpack for compliance with radiation standards.

These inspections shall be performed by persons designated by the STATE. Evidence of any violations revealed by STATE inspections shall be provided to USDOE. In the event of serious violations, the inspecting officer may order the vehicle, or rail car out of service; for vessels, the inspector shall request the Coast Guard to order the vessel out of service.

5. Each shipment destined for the Hanford Reservation shall be inspected promptly upon arrival at the Hanford Reservation by USDOE to ensure that any shipment damage, contamination or radiation levels beyond Department of Transportation (DOT) allowable levels, or other packaging or loading irregularities are identified. If any such irregularity is noted or otherwise reported, an immediate report shall be made to the cognizant shipper and involved carrier and appropriate corrective action taken. USDOE shall advise the Duty Officer, DEM, state of Washington immediately of all violations of applicable laws and regulations, and the corrective action taken. USDOE agrees to arrange to have the Hanford Reservation ready to accept shipments promptly upon arrival.
6. USDOE and the STATE agree to cooperate, in good faith, in activities designed to improve the emergency response capabilities of state and local governments along potential routes for these shipments.
7. USDOE recognizes its responsibility for shipments of nuclear materials transported by, or for it and shall take appropriate action, as provided by law, in response to claims, actions or proceedings brought against it, or in which it is joined as a party, due to radiological injury or damage to persons or property in the STATE resulting from such shipments of non-classified high-level radioactive waste and/or spent fuels. To the extent not covered by the nuclear hazards insurance and indemnity afforded by a licensee of NRC, USDOE represents that indemnity or redress for public liability arising out of a nuclear incident or extraordinary nuclear occurrence during the transportation of non-classified high-level radioactive waste, spent fuel, and other highway route controlled quantities of nuclear materials will be provided pursuant to nuclear hazards indemnity articles in contracts between USDOE and respective contractors or the Federal Tort Claims Act, as appropriate. USDOE agrees to seek or to assist in seeking Congressional or other appropriate authority for reimbursement of any loss sustained or cost incurred arising out of any such shipment of non-classified high-level radioactive waste, spent fuel, or other highway route controlled quantities of nuclear materials which is not otherwise compensated.

#### C. PRINCIPLES FOR COORDINATION AND COMMUNICATION

1. USDOE shall provide for each campaign of shipments covered under this agreement three months advance communications, either by electronic facsimile or in writing, to the Duty Officer, (DEM), state of Washington prior to the first

shipment of non-classified high-level radioactive waste, spent fuel or other highway route controlled quantities of nuclear materials in that campaign. Such communication shall be provided to allow the STATE to consider the need for special routing, emergency response, inspection and other arrangements for that campaign. The communication shall provide the following information:

- a. Shipper: Name, address, telephone number.
  - b. Carrier: Name, address, telephone number.
  - c. Receiver: Name, address, telephone number.
  - d. Description of the expected characteristics of the campaign (number of shipments, approximate volume, curies, isotopes per shipment).
  - e. Point of origin.
  - f. Expected schedule for campaign shipments.
  - g. Expected entry point(s) and route(s) campaign shipments will follow in the STATE.
  - h. USDOE point of contact for shipment information: Name, organization, address, telephone number.
  - i. In addition, USDOE shall provide the STATE with the following information to the extent possible:
    - 1) Identification of which NRC licensed shipping casks will be used;
    - 2) Descriptions of other expected cargo for each mode of transport and its potential for hazardous interaction with nuclear materials;
    - 3) General descriptions of any containerization or special tie-down provisions;
    - 4) References to any applicable EIS', EA's and other environmental reports; and
    - 5) Any provisions to ensure the security of the campaign shipments.
2. Within 4 weeks of receipt of the information outlined in C.1 the STATE will provide USDOE with the following information in writing:
- a. Contact(s), phone number(s) and locations for inspections.
  - b. Contact(s), and phone number for immediate road and weather conditions.
  - c. Statement of whether or not the STATE will be using escorts and contact(s) and phone number if appropriate.
  - d. Statement on whether or not the state has designated safe havens and their locations.
  - e. STATE contact(s) for vehicle location check-in and emergency response assistance while enroute.
  - f. Requests for additional information from USDOE.
3. USDOE will act in good faith to provide the STATE any additional information requested by the STATE.
4. At least 7 days prior to each shipment within a campaign, USDOE will provide the DEM Duty Officer with the following information, either in writing or electronic facsimile:
- a. Confirmation or any changes to items C.1.a-c, e and h.
  - b. Description of the shipment: Volume, curies, isotopes.
  - c. Seven day period during which departure is estimated to occur.
  - d. Seven day period during which arrival at state boundaries is estimated to occur.
  - e. Entry point and route shipment will follow in STATE.

5. At least four hours before initiation of travel within or through the STATE or its waters, the carrier will notify the DEM Duty Officer for the purpose of enabling the STATE to conduct the inspections outlined under B.5.
6. Persons in control of vehicles (rail, truck, barge, ship and all other transport modes) shall check in with the DEM Duty Officer at least every 2 hours while the vehicle is traveling within the STATE.
7. The carrier shall notify the DEM Duty Officer within 2 hours after the shipment leaves the STATE or its waters.
8. USDOE and the STATE will notify each other of any emergency situations which may occur incident to each shipment of non-classified high-level radioactive waste, spent fuel, or other highway route controlled quantities of nuclear materials and to cooperate in responding to any radiological incidents arising while these shipments are enroute through or within the STATE and its waters.
9. After each campaign is completed, USDOE will provide a written summary and evaluation of the campaign to the STATE. The summary shall include the radiological reading for each shipment. The STATE will provide USDOE with its evaluation of the campaign.

#### **D. APPLICABILITY**

1. This Principle of Understanding provides guidance that is intended to be followed by USDOE and the STATE according to its terms and conditions.
2. Nothing in this Principle of Understanding is intended to restrict or extend the constitutional or statutory authority of either the STATE or USDOE.

IN WITNESS WHEREOF, The parties have affixed their signatures below.

Booth Gardner, Governor  
State of Washington

Date

Michael J. Lawrence  
Manager, Richland Operations Office  
U.S. Department of Energy

Date



DRAFT  
4/21/86

PRINCIPLES OF UNDERSTANDING

WHEREAS, The U. S. Department of Energy (USDOE)<sup>1/</sup> and the State of Washington (STATE) each recognize the need for the safe handling, transportation and storage of radioactive materials into, out of, or within the STATE and waters within its jurisdiction; and

WHEREAS, Each recognize the involvement of many federal and state agencies to effect such safe handling, transportation and storage; and

WHEREAS, Each recognize the need for formalized procedures for state and federal cooperation with respect to these activities;

NOW, THEREFORE, In the spirit of mutual cooperation, USDOE and the STATE consider the following voluntary principles meet both parties' interests and accomplish these objectives:

A. GENERAL PRINCIPLES RELATED TO THIS AGREEMENT

The following principles apply only to shipments of non-classified spent fuel, by or for the USDOE, which enter, leave or travel within the STATE and waters within its jurisdiction.

- 1/ The term "USDOE" includes contractors whose activities in handling radioactive materials are controlled by the USDOE and are not licensed by the Nuclear Regulatory Commission (NRC).

1. USDOE and the STATE agree, in good faith, to notify each other regarding any change in policy affecting these Principles.
2. Nothing in this agreement shall be construed to limit, repeal, or in any manner modify the existing legal rights, privileges, and duties of the parties hereto as provided by contract, agreement, statute, or any other law, regulation or applicable court decision.
3. These Principles of Understanding shall continue for a period of five years from the latest date of signature of either party and may be renegotiated for extensions upon the agreement of both parties. The Principles of Understanding may be terminated by either party by written 60-day advance notice to the other party.

#### B. PRINCIPLES APPLICABLE TO SHIPMENTS

The following principles are applicable to shipments of non-classified spent fuel, by or for USDOE, which leave, or travel within the STATE and waters within its jurisdiction:

1. USDOE will ensure all shipments are packaged in appropriate certified shipping containers and that each shipment complies with applicable federal and state regulations.<sup>2/</sup>

<sup>2/</sup> Containers used shall be certified to NRC standards found at 10 CFR 71, subparts E and F.

2. USDOE will ensure that each shipment will be made in accordance with the operating instructions applicable to the shipping container.
3. Shipments made under this agreement will be made in accordance with an approved U. S. Department of Transportation (USDOT) physical protection plan.
4. With respect to each transportation mode, the following will apply:
  - a. For shipments made via motor vehicle, STATE officials shall have the right to inspect: (1) the cask and any container or overpack for compliance with radiation standards; (2) vehicles and trailers for vehicle safety; (3) evidence of driver qualifications including medical certificate, operator's license, log book, etc.; and (4) these inspections shall take place at points agreed upon by the STATE and USDOE or any reasonable point along the public highways.
  - b. For shipments made via railroad, STATE officials shall have the right to conduct inspections at the USDOE's railroad receiving facilities as well as other appropriate locations on railroad-owned property. USDOE shall provide the STATE with information necessary for the STATE to arrange for such inspections. These STATE inspections shall include: (1) the casks and any container

or overpack for compliance with radiation standards; (2) railroad cars for operational safety; and (3) rail car position and components.

- c. For shipments made via water (ocean-going vessel or inland barge), the USDOE shall request carrier coordination to enable STATE inspection at the first port of call, when the vessel takes on a pilot or other appropriate point as desired by the STATE. These STATE inspections shall include the casks and any containers or overpacks for compliance with radiation standards. The STATE shall make any necessary coordinations with the U. S. Coast Guard.

5. If, as a result of any of the inspections described in paragraph 4 above, violations or unsafe conditions are found, the vehicle or vessel shall immediately be moved, in a safe manner, to an appropriate location. The movement will not be resumed until appropriate corrective actions have been completed. Evidence of any violations revealed by STATE inspectors will be promptly reported to USDOE.

6. Each shipment of non-classified spent fuel destined for the Hanford Reservation shall be inspected promptly upon arrival at the Hanford Reservation by USDOE to ensure that any shipment damage, contamination or radiation levels beyond USDOT allowable levels, or other packaging or loading irregularities are identified. USDOE agrees to arrange to

have the Hanford Reservation ready to accept shipments promptly upon arrival. If any such irregularity is noted or otherwise reported, prompt report will be made to the cognizant shipper and involved carrier and appropriate corrective action taken. USDOE shall advise the Duty Officer, Department of Emergency Management (DEM), State of Washington, immediately of all violations of applicable laws and regulations, and the corrective action taken.

7. USDOE and the STATE agree to cooperate, in good faith, in activities designed to improve the emergency response capabilities of state and local governments along potential routes for these shipments.
8. USDOE recognizes its responsibility for shipments of non-classified spent fuel, by or for it, and will take appropriate action, as provided by law, in response to claims, actions or proceedings brought against it, or in which it is joined as a party, due to radiological injury or damage to persons or property in the STATE resulting from such shipments of non-classified spent fuel. To the extent not covered by the nuclear hazards insurance and indemnity afforded by a licensee of NRC, USDOE represents that indemnity or redress for public liability arising out of a nuclear incident or extraordinary nuclear occurrence during the transportation of non-classified spent fuel will be provided pursuant to nuclear hazards indemnity articles in contracts between USDOE and respective contractors or the Federal Tort Claims Act, as appropriate.

### C. PRINCIPLES FOR COORDINATION AND COMMUNICATION

1. USDOE shall provide for each campaign of shipments covered under this agreement timely advance courtesy communications, by telephone, to the STATE<sup>3/</sup> prior to the first shipment of non-classified spent fuel in that campaign. Such communication shall be provided to allow the STATE to consider the need for special routing, emergency response, inspection and other arrangements for that campaign. The communication shall provide the following information:
  - a. Shipper: Name, address, telephone number
  - b. Carrier: Name, address, telephone number
  - c. Receiver: Name, address, telephone number
  - d. Description of the expected characteristics of the campaign (number of shipments, approximate volume, curies, isotopes per shipment)
  - e. Point of origin
  - f. Expected schedule for campaign shipments
  - g. Expected entry point(s) and route(s) campaign shipments will follow in the STATE

3/ Such communications shall be made to the authorized NRC Governor's designee.

- h. USDOE point of contact for shipment information: Name,  
organization, address, telephone number
- i. In addition, USDOE shall provide the STATE with the following information to the extent possible:

- (1) Identification of the shipping containers to be used
- (2) General descriptions of any containerization or special tie-down provisions
- (3) Any provisions to ensure the security of the campaign shipments.

- 2. Promptly after receipt of the information outlined in C.1., the STATE will provide USDOE with the following information:

- a. Contact(s), phone number(s) and location(s) for inspection(s)
- b. Contact(s), (and) phone number for immediate road and weather conditions
- c. Statement of whether or not the STATE will be using escorts and contact(s), and phone number(s) if appropriate
- d. Statement on whether or not the STATE has designated safe havens and their location(s)
- e. STATE contact(s) for vehicle location check-in and emergency response assistance while enroute
- f. Requests for additional information from USDOE

3. USDOE will act in good faith to provide the STATE any additional information requested by the STATE, as well as any changes in previously provided information.

4. At least 24 and 4 hours before initiation of travel within or through the STATE or waters within its jurisdiction, the carrier will notify the Duty Officer, DEM, for the purpose of enabling the STATE to conduct the inspections outlined in paragraph B.4.

5. The USDOE and the STATE will notify each other of any emergency situations which may occur incident to each shipment of non-classified high-level radioactive waste, spent fuel, or other highway route controlled quantities of nuclear materials and to cooperate in responding to any radiological incidents arising while these shipments are enroute through or within the STATE and waters within its jurisdiction.

6. After each campaign is completed, USDOE will provide a written summary and evaluation of the campaign to the STATE. The summary shall include the record of radiological readings for each shipment. The STATE will provide USDOE with its evaluation of the campaign.



D. APPLICABILITY

1. These Principles of Understanding provide guidance that is intended to be followed by the USDOE and the STATE.
2. Nothing in these Principles of Understanding is intended to restrict or extend the constitutional or statutory authority of either the STATE or USDOE.

IN WITNESS WHEREOF, The parties have affixed their signatures below.

Booth Gardner, Governor                      DATE  
State of Washington

Michael J. Lawrence                      DATE  
Manager, Richland Operations Office  
U. S. Department of Energy