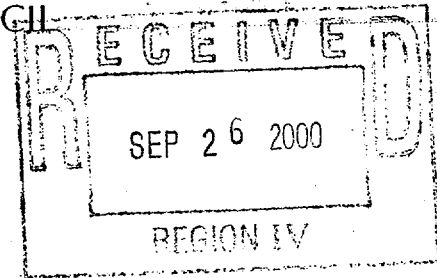




STATE OF WASHINGTON
ENERGY FACILITY SITE EVALUATION COUNCIL
PO Box 43172 • Olympia, Washington 98504-3172

September 18, 2000



Mr. D.W. Coleman
Manager, Regulatory Affairs
Energy Northwest
Post Office Box 968 (MD PE20)
Richland, Washington 99352-0968

Subject: Columbia Dry Cask Storage Facility, EFSEC Resolution No. 295

Dear Mr. Coleman:

During its regular meeting of September 11, 2000, the Council approved Resolution No. 295 (see attached), thereby amending the Columbia Generating Station (Columbia) Site Certification Agreement to allow for the construction and operation of a Dry Cask Storage Facility at the project site. In authorizing Energy Northwest to proceed with construction of the spent fuel storage facility, the Council placed two conditions on its approval that must be implemented prior to the initial fuel loading: amending the plant's Emergency Plan to recognize the potential for accidental releases from the facility; and amending the Radiological Environmental Monitoring Program to add radiological monitoring of the storage area.

The Council intends to closely monitor construction activities and support the state Department of Health's participation in ongoing radiological monitoring. The Council also expects to work cooperatively with the Nuclear Regulatory Commission to follow operational and maintenance activities associated with the storage facility.

We appreciate the cooperation provided by Energy Northwest staff as the Council examined the amendment request and, in particular, our counsel's review of the federal regulations that apply to the cask storage system. Please thank Dave Larkin and other staff that worked with the Council during its review process.

If you have any questions, please call me at (360) 956-2152.

Sincerely,

Allen J. Fiksdal
EFSEC Manager

cc: Bill Kiel, Energy Northwest
Maillian Uphaus, Military
Rich Heath, Attorney General's Office

Lynn Albin, Health
Dick Barkdoll, Labor & Industries
Ellis Merschoff, NRC RIV ✓

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**WASHINGTON STATE
ENERGY FACILITY SITE EVALUATION COUNCIL**

**RESOLUTION NO. 295
ENERGY NORTHWEST DRY CASK STORAGE FACILITY**

Nature of Action. By letter dated May 4, 2000, Energy Northwest requested an amendment to the WNP-2 (now Columbia Generating Station) Site Certification Agreement (SCA) to allow for the construction of a Dry Cask Storage System. Energy Northwest is requesting that the project description in the WNP-2 SCA, section I.B.1, be amended to include the Spent Fuel Storage Facility under the listing of project elements.

Background. The proposed activity includes construction of a fenced cask storage yard and an equipment storage building. The project also includes upgrades to plant roadways for heavy loads and installation of security and utility systems. The proposed construction activity is located entirely within the area previously disturbed by plant construction. Operation of the storage facility will involve the transportation, handling, and placement of the casks at the storage site; maintenance of the cask system; security of the facility; and an ongoing monitoring program.

In combination with a pre-approved Nuclear Regulatory Commission (NRC) certified storage system (pursuant to 10 CFR Part 72), the Dry Cask Storage Facility will augment the current wet storage system by providing additional spent fuel storage capacity at the plant site. The Dry Cask Storage Facility will provide interim onsite storage until such time that the U.S. Department of Energy's geologic repository is available to receive these wastes. The facility is necessary for the continued operation as well as the decommissioning of the plant.

Procedural Status. EFSEC's SCA amendment procedure is governed by chapter 80.50 RCW and chapter 463-36 WAC. Pursuant to WAC 463-36-030, the Council held a public hearing on September 6, 2000, to receive comment on the proposed storage facility. Notice of that meeting was given in the Tri-City Herald on August 17, 2000, and mailed to approximately 150 interested agencies or organizations.

In accordance with WAC 463-36-040, the Council is required to review whether the proposal to amend the Columbia Generating Station SCA is consistent with (1) the intention of the original SCA; (2) the applicable laws and rules; and (3) the public health, safety, and welfare (including environmental impacts). The Council's rules provide the option of approving an amendment by resolution (463-36-070) or by the Governor (463-36-080).

The Council has reviewed the request for amendment under the procedures set out in its rules and concluded that the proposed does not substantially alter the substance of any provision of the existing SCA and does not have a significant detrimental effect upon the environment. Based upon those findings as discussed below, the Council considers

construction of the Dry Cask Storage System to be a technical amendment to the Columbia SCA and through this resolution amends the SCA accordingly.

A. Consistency with intention of original SCA.

Under WAC 463-36-040(1), the Council must consider whether the proposed amendment is consistent with the intention of the original SCA.

The original SCA certified, to the extent authorized by state law, the construction and operation of a nuclear power plant at the project's location on the Hanford Site (SCA I.B.2). The additional authorization sought under the proposed amendment would allow the construction of a gravel roadway, metal storage building, cask storage yard, and associated security, lighting, and utility systems. These new physical features are similar to previously approved facilities found throughout the plant site and the proposed construction activity is located entirely within the area disturbed by plant construction.

In approving the construction and operation of the Columbia Generating Station in 1972, the state fully recognized that spent nuclear fuel would be stored onsite. This has been accomplished through a wet storage system located in the reactor building. Spent fuel has been stored in the spent fuel pool since the first refueling in 1986. As noted in the Department of Health's August 10, 2000 comment letter:

The storage of spent fuel onsite is already a permitted activity and granted under the general license issued by Nuclear Regulatory Commission. The Department does not view the storage of fuel in a dry cask system to be a significant departure from the current practices allowed in the SCA.

At the time the original SCA was adopted, it was intended that the spent fuel would be turned over to the federal government. The federal government has not met its obligation to provide a repository for spent fuel. The delay has caused many nuclear power plants across the country to install dry cask storage facilities to increase the plants' capacities to store spent fuel onsite. The NRC regulates the design of dry cask storage facilities and the containers that are used for storage and transport of the spent fuel. Fuel stored in a monitored dry cask system is as safe as fuel stored in a spent fuel pool.

As noted above, it is Energy Northwest's intention to provide interim onsite storage of spent nuclear fuel in dry casks until such time that a federal geologic repository is available to receive these wastes.

The Council finds that the proposed Dry Cask Storage Facility is consistent with the intent of the existing Columbia Generating Station SCA.

B. Consistency with applicable laws and rules.

Under WAC 463-36-040(2), the Council must consider consistency with applicable laws and rules, including chapter 43.21C RCW and chapter 197-11 WAC (the State Environmental Policy Act and SEPA rules), WAC 463-36-070 and -80, and pertinent federal statutes.

1. Consistency with SEPA.

In general, SEPA requires an agency to perform a threshold determination to determine whether a proposed action will have a significant adverse affect on the environment. After reviewing the proposed amendment to construct the storage facility and an environmental checklist submitted with the application, the Council's responsible official for SEPA issued a Mitigated Determination of Non-Significance (DNS) on July 7, 2000. There were two responses. In determining that the proposed action would not have a probable significant adverse impact on the environment, two mitigating conditions were cited: Emergency Plans should be amended to recognize the potential for accidental releases from the facility; and the dry cask site should be incorporated into the plant's Radiological Environmental Monitoring Program (REMP).

The Department of Health commented on the SEPA Checklist that, "There are no radiological concerns regarding the construction of the storage yard (cement slab and auxiliary buildings) and the roadway from the plant to the storage yard."

2. Consistency with WAC 463-36-070 and -080.

WAC 463-36-070 provides that

...[a]n amendment which changes a technical provision or requirement within the terms of the SCA, and constitutes no substantial alteration of any provisions of the SCA, and is determined to have no detrimental effect upon the environment, shall be effective upon adoption of a council resolution.

On the other hand, WAC 463-36-080 provides that

...[a]n [SCA] amendment which substantially alters the substance of any provision of the SCA or which is determined to have a significant detrimental effect upon the environment shall be effective upon the signed approval of the governor...

Based on its evaluation of the impacts associated with the proposed Dry Cask Storage Facility, and reading these two rules together, the Council finds that this amendment is "technical" in nature; it can, and will be effective upon adoption of this resolution.

3. Consistency with federal requirements.

The U.S. Nuclear Regulatory Commission in 10 CFR Part 72 authorizes the dry cask spent fuel storage system proposed for the Columbia Generating Station. As such, state

jurisdiction over this system is pre-empted by the federal statutes and rules. Under a general license, Energy Northwest is authorized to store spent fuel in an Independent Spent Fuel Storage Installation (ISFSI). The general license requires Energy Northwest to use a cask that has been certified by the NRC. The HI-STORM cask being used has received such certification. The NRC will be involved throughout the entire process of designing, constructing, and operating the cask system.

The jurisdictional authority of the NRC was addressed in a comment letter received from the state Department of Labor and Industries Chief Boiler and Pressure Vessel official, who stated that, "...these subject vessels do fall under federal control, and are exempt from the Washington Boilers and Unfired Pressure Vessels law..."

Consistent with the separate jurisdictions of the state and NRC, the Council has focused its review on those aspects of the proposal that are specific to the state's interests. These include the environmental effects of construction of the physical infrastructure and the operational aspects of the storage system that relate to the environment. The mitigating conditions cited in the SEPA determination address the state's interests for having the facility covered in utility, state and local emergency plans and the ongoing radiological monitoring program.

The Council's rules require it to consider whether the proposed amendment is consistent with applicable laws and rules. As cited above, the Council has examined the dry cask storage proposal against state and federal regulations and concludes that the proposed amendment is consistent with the applicable laws and rules.

C. Consistency with public health, safety, and welfare.

Under WAC 463-36-040(3) and -050, the Council must consider whether the proposed amendment is consistent with public health, safety, and welfare, including environmental aspects of the public welfare.

The Council finds that the environmental effects of the storage system are minimal. In reaching its SEPA determination, the Council examined environmental documents prepared by the NRC that in summary found that the dry cask storage of spent nuclear fuel at civilian nuclear reactor sites, "...would not be a major Federal action significantly affecting the quality of the human environment..." (10 CFR Part 72, Subpart K).

In addition, the Council received comments from two state agencies that reinforce the conclusion that the Dry Cask Storage Facility will not endanger the public health and safety.

The Military Department, Emergency Management Division, notes that:

The fixed nuclear facility emergency plan that the state has written, in coordination with the affected counties that surround the plant, can easily include the possible hazard that the building of the dry cask storage facility might add to

the site. The NRC has determined that the environmental effects of the storage system are few. Leaking into the ground water, which has been a problem with the storage of materials on the Hanford Reservation, is impossible, as there are no liquid or gaseous releases due to the vacuumed dried process of the materials and the fact that the storage canisters are welded shut. The state will continue to monitor the progress of this proposed addition to the Site Certification Agreement.

The Department of Health notes that:

Adding the specific reference to the fuel storage in the SCA allows the State the opportunity to specifically review the process and assure that the public health and the environment is not endangered because of this activity. The Department already initiated baseline monitoring of the proposed site and review of documents related to spent storage facilities and the storage system chosen by Energy Northwest. The Department will be working with the Energy Northwest staff to establish appropriate environmental monitoring that will assure the facility does not impact public health or the environment. The additional monitoring will be part of the environmental compliance requirements detailed in EFSEC Resolution 260.

Department staff will continue to follow Energy Northwest's activities relating to dry cask storage. 10 CFR 72, Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste, requires the plant to evaluate environmental factors and the potential for radiological and other environmental impacts on the region. The Department will follow Energy Northwest's activities, as these evaluations are done.

The Council also examined the construction activities planned for the infrastructure to support the dry cask facility and the siting considerations applied by Energy Northwest and concluded that the public health and safety will be fully protected at all times during the construction and operation of the facility.

D. Conclusion

The Council concludes that the proposed amendment to the Columbia Generating Station SCA to construct and operate a spent fuel Dry Cask Storage Facility is consistent with the intent of the original SCA; applicable law; and the public health, safety, and welfare.

RESOLUTION: Having considered Energy Northwest's request to amend the Columbia Generating Station SCA to allow for the construction and operation of a Dry Cask Storage Facility at the project site, the Council approves the storage facility as described in the attached amendment request. The Council authorizes Energy Northwest to proceed with construction activities, subject to taking steps to implement the following two conditions proposed as mitigation in the SEPA determination prior to initial fuel loading:

1. The Columbia Emergency Plan will be amended to recognize accidental releases from the proposed facility; and
2. The Columbia Radiological Environmental Monitoring Program (REMP) will be amended to add radiological monitoring of the Dry Cask Storage Facility. The results of monitoring will be reported in the annual REMP report to the Council. (The state will add the storage facility to its Columbia radiological monitoring program and its audits of the Energy Northwest REMP program).

The Columbia Generating Station Site Certification Agreement is amended as follows to recognize the addition of the Dry Cask Storage Facility.

SCA Condition I.B.1

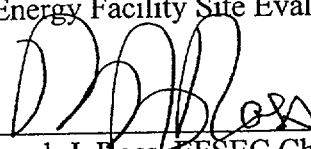
B. Site Certification

1. The nuclear electric generating facility authorized to be sited by the Certification Agreement as presently defined is to include the following elements, hereinafter called the "Project": a boiling water reactor with a rated output of 3,486 megawatts (thermal), a turbine-generator, a mechanical draft evaporative cooling tower system, a control and re-cycle facility, pumphouses, **spent fuel storage facility**, transmission lines, associated service lines and other associated facilities required for the generation and transmission of electric power which are reasonably necessary and economically practicable for achieving electric generation capacity of approximately 1236 megawatts.

Dated this 11th day of September 2000.

Washington State Energy Facility Site Evaluation Council

By:


Deborah J. Ross, EFSEC Chair

Attest:


Allen J. Fiksdal, EFSEC Manager

Attachment

Energy Northwest Dry Cask Storage Facility Amendment Request (May 4, 2000)

MAY 08 2000

May 4, 2000
GO2-00-083**ENERGY FACILITY SITE
EVALUATION COUNCIL**Mr. A.J. Fiksdal, Manager
Energy Facility Site Evaluation Council
PO Box 43172
Olympia, Washington 98504-3172

Dear Mr. Fiksdal:

Subject: **ENERGY NORTHWEST WNP-2 POWER PLANT
WAC 463-36 SCA AMENDMENT REQUEST
DRY CASK STORAGE FACILITY**

In accordance with WAC 463-36, Energy Northwest requests an amendment to the WNP-2 Site Certification Agreement (SCA) to allow the construction of a dry cask storage facility. In combination with a NRC-certified storage system (10 CFR 72), this facility will augment the current wet storage system by providing additional spent fuel storage capacity at WNP-2. This facility is necessary for both the continued operation and the decommissioning of the plant. This facility will provide interim onsite storage of spent nuclear fuel in dry casks until such time that the U.S. Department of Energy's geologic repository is available to receive these wastes.

Energy Northwest concludes that the proposed activity is consistent with the intent of the original SCA, complies with applicable laws and rules, and is protective of public health and the environment. The requested amendment, in the opinion of Energy Northwest, does not substantially alter the substance of any provision of the SCA nor does it have a significant detrimental effect upon the environment. Accordingly, Energy Northwest believes that the Council can approve this action by resolution (WAC 463-36-070).

A description of the proposed activity and a SEPA checklist are attached. If you have any questions or desire additional information regarding this matter, please contact Mr. WA Kiel at (509) 377-4490.

Respectfully,

DW Coleman (Mail Drop PE20)
Manager, Regulatory Affairs

Attachments

cc: L Albin - WDOH

**WNP-2 Site Certification Agreement
WAC 463-36 Request for Amendment
Construction of Dry Cask Storage Facility**

Summary of Request

Energy Northwest requests a WAC 463-36 amendment to the WNP-2 Site Certification Agreement (SCA) to allow the construction of a dry cask storage facility on the premises of the WNP-2 power generation facility. In combination with a pre-approved NRC-certified storage system (10 CFR Part 72), this facility will augment the current wet storage system by providing additional spent fuel storage capacity at WNP-2. This facility is necessary for the continued operation as well as the decommissioning of the plant. This facility will provide interim onsite storage of spent nuclear fuel in dry casks until such time that the U.S. Department of Energy's geologic repository is available to receive these wastes.

Proposed Amendment

It is proposed that the project description in WNP-2 SCA section I.B.1 be amended to include listing of the spent fuel storage facility. The requested addition is marked in bold type. This section was previously modified by EFSEC Resolution No. 273 to change the thermal power and electrical generation capacity of the plant.

B. Site Certification

1. The nuclear electric generating facility authorized to be sited by the Certification Agreement as presently defined is to include the following elements, hereinafter called the "PROJECT": a boiling water reactor with a rated output of approximately 3,486 megawatts (thermal), a turbine-generator, a mechanical draft evaporative cooling tower system, a control and re-cycle facility, pumphouses, **spent fuel storage facility**, transmission lines, associated service lines and other associated facilities required for the generation and transmission of electric power which are reasonable necessary and economically practicable for achieving electric generation capacity of approximately 1236 megawatts.

Approval Process

In accordance with WAC 463-36-040, EFSEC is required to review whether this proposal to amend the SCA is consistent with (1) the intention of the original SCA, (2) the applicable laws and rules, and (3) the public health, safety, and welfare (including environmental impacts). The Washington Administrative Code provides the Council with the option to approve the request either by amendment (WAC 463-36-070) or by the governor's signature (WAC 463-36-080). The selection of the approval mechanism is based on a determination by the Council as to whether the proposed action substantially alters the substance of any provision of the existing SCA. This amendment request has been structured to assist the Council in evaluating the proposal against the guidance provided in WAC 463-36.

Description of the Proposed Activity

The proposed SCA amendment request involves the construction of physical infrastructure to support the use of the NRC authorized dry cask storage system. The proposed action will involve the following activities:

- **Transport Roadway** – Reconstruction of the existing roadway between the truck bay on the east side of the reactor building and the dry cask storage yard located north of the plant is necessary (Figure 1). The existing light duty roads are insufficient to support the weight of a track mounted transport vehicle and a loaded storage cask.

The geotechnical consultant on this project has investigated the soils in this area and recommends the removal of the existing soil, artificial fill, and pavement to a depth of approximately 24 inches along this route. This excavated soil will be disposed onsite in existing borrow pits (e.g., the WNP-2 or WNP-1/4 landfill areas). Pavement and other similar debris will be placed in the onsite inert and demolition waste landfill (EFSEC Resolution No. 288). The roadway will be reconstructed with gravel or a combination of gravel and concrete or pavement. The gravel will be purchased from an offsite source.

- **Cask Storage Yard** – The cask storage yard will be located in the area immediately north-northwest of the plant (Figure 1). This area was disturbed during the original construction of the plant and has been used as an equipment storage yard since that time. When completed, the yard will have a capability of storing 90 casks.

The storage yard will be comprised of five concrete slabs constructed at grade and backfilled with gravel as specified by the geotechnical consultant (i.e., similar to the roadway specification). Double security fences will surround the storage yard. The fenced security area will be supplemented with security equipment such as light poles, closed-circuit cameras, and intrusion detection devices.

Each pad will be approximately 30 feet wide by 135 feet long and made of reinforced concrete approximately 24 inches thick. Each pad is designed to hold 18 casks on 15-foot centers. The pads will be separated from the adjacent pad or fence by at least 30 feet to allow for transporter access. A small building will be constructed within the fenced enclosure for the purpose of housing the electrical equipment that supports the security systems and cask temperature monitoring functions. It is anticipated that this building will be a slab on-grade, single story metal building (with approximate dimensions of 20 ft x 20 ft).

The storage yard will be built in two distinct phases. The first phase will be built immediately and will be comprised of two storage pads and the surrounding fences (Figure 2). At some time in the future when the first two pads are nearly filled (i.e., 36 casks), the remaining three pads and fencing will be constructed (Figure 3). This proposed SCA amendment encompasses the entire storage area (5 pads) with the acknowledgement that it will be built in phases.

Construction of the cask storage pads will require the excavation and removal of the artificial fill and the underlying natural soil in the area beneath the pads as specified by the geotechnical consultant (approximately six feet). Other areas of the storage yard will be excavated approximately two feet. Similar to the roadway excavation, this material will be disposed onsite in existing WNP-2 or WNP-1/4 landfill areas. Pavement, concrete, metals, and other similar material encountered during the excavation will be placed in the onsite inert and demolition waste landfill. The excavation will be partially backfilled with compacted structural fill using soils derived from existing borrow areas at WNP-2 or WNP-1/4. The

final gravel backfill will be specified by the geotechnical consultant and obtained from an off-site commercial source.

- **Equipment Storage Building** – The dry cask storage system requires the construction of an equipment storage building and an adjacent concrete pad (Figure 1). The building will be a large (approximately 40 ft x 100 ft) slab-on-grade metal building located south of the storage yard. The purpose of this building is to store the transporter vehicle and the cask system equipment (new canisters, casks, lifting equipment, transport cask parts, etc.). Because of space limitations in the reactor building, much of the cask handling equipment will be stored in this building during refueling. The building foundation preparations will require about a 24-inch excavation.

An approximately 50-foot by 50-foot concrete pad will be built just north of the equipment storage building. The purpose of this pad is to provide heavy load working space for several tasks such as the receipt of materials, final construction of the storage casks, and equipment storage. This reinforced concrete pad will be approximately 24 inches thick and similar to the cask storage pads.

- **Utility Installation** – The operation of the storage yard and equipment building will require the installation of new electrical, communications, and water services. These new utilities, including water and sanitary service to the equipment storage building, will be extensions of existing yard systems. Most of the utility conduit and piping will be installed below grade. One exception is an optical fiber communications cable that will be installed overhead for a length of about 800 feet from a point north of the WNP-2 transformer yard to a location just east of the northeast corner of the cask storage yard. This will require the installation of new utility poles (see Figure 1).

Siting Considerations

The NRC general license that authorizes the storage of spent fuel (discussed below) necessarily restricts the location of the facility to the power reactor site because it relies on evaluations of site characteristics performed during the original siting of the power plant. The plant operating license environmental protection plan further encourages construction activities to be confined to those onsite areas previously disturbed during the original site preparation and plant construction. As a result, the siting of the storage facility is limited to the WNP-2 site. The specific onsite location of the facility is then driven by practical considerations regarding the site layout.

The area inside of the WNP-2 security area fencing was evaluated as an option for the onsite location. This location would benefit from the existing security systems and close proximity to the reactor building. However, the inside-the-fence sites were eliminated because of insufficient available area and conflicts with underground utilities and piping.

The site in the industrial yard north of the plant was selected for the following reasons.

- Adequate space is available for the cask storage yard and equipment storage building.

- Existing roadways can be used for the cask transport route.
- The area was previously disturbed by the original plant construction and covered with gravel.
- No major earthwork is necessary to prepare the site.
- The geotechnical evaluations indicated that the foundation material is suitable.
- There are minimal interferences from underground piping and utilities.
- The area is used as a materials and equipment storage yard that is easily displaced.
- Minimal underground trenching is required because of the closeness of the storage area to yard electrical and fire protection piping.
- The area is sufficiently removed from office buildings and other places of routine occupancy.
- The area is close to rail access for future offsite shipping.

Intent of the Original SCA (WAC 463-36-040)

The original SCA certified, to the extent authorized by state law, the construction and operation of a nuclear power plant at this location (SCA Section I.B.2). The additional authorization sought under this amendment request would allow the construction of a gravel roadway, metal storage building, cask storage yard, and the attendant security, lighting, and utility systems. These new physical features are similar to previously approved facilities found throughout the plant site and are therefore consistent with the kind of activities originally contemplated during the issuance of the SCA.

From a conceptual point-of-view, spent fuel storage has always been an integral part of the plant design. Spent fuel has been stored at the plant site since the first refueling in 1986. The dry cask storage facility will augment the current wet storage system by providing additional spent fuel storage capacity at WNP-2. This facility is necessary for the continued operation and the decommissioning of the plant. It is the intent of this facility to provide interim onsite storage of spent nuclear fuel in dry casks until such time that the U.S. Department of Energy's geologic repository is available to receive these wastes.

Because the original environmental report for the plant includes descriptions of loading spent fuel casks for transport to reprocessing plants and because spent fuel storage has always been an integral part of plant design, this activity continues this concept with a modern passive storage system. The promulgation of the NRC general license for dry cask storage determined that such storage does not result in significant incremental environmental impacts. Accordingly, the proposed activity does not alter the intent of the original SCA with regard to environmental issues.

Applicable Laws and Rules (WAC 463-36-040)

The U.S. Nuclear Regulatory Commission in 10 CFR Part 72 authorizes the dry cask spent fuel storage system used at WNP-2. Part 72 specifies the requirements for an independent spent fuel storage installation as described in 10 CFR 72.1:

72.1 Purpose

The regulations in this part establish requirements, procedures, and criteria for the issuance of licenses to receive, transfer, and possess power reactor spent fuel and other radioactive materials associated with spent fuel storage in a independent spent fuel storage installation (ISFSI) and the terms and conditions under which the Commission will issue these licenses. The regulations in this part also establish requirements, procedures, and criteria for the issuance of licenses to the Department of Energy (DOE) to receive, transfer, package, and possess power reactor spent fuel, high-level radioactive waste, and other radioactive materials associated with the spent fuel and high-level radioactive waste storage, in a monitored retrievable storage installation (MRS). The regulations in this part also establish requirements, procedures, and criteria for the issuance of Certificates of Compliance approving spent fuel storage cask designs.

The NRC in 10 CFR 72.8 reserves the exclusive right to license spent fuel storage in agreement states.

72.8 Denial of licensing by Agreement States

Agreement States may not issue licenses covering the storage of spent fuel in an ISFSI or the storage of spent fuel and high-level radioactive waste in an MRS.

A general license for the storage of spent fuel at power reactor sites is granted by the NRC in 10 CFR 72.210 (Subpart K).

Subpart K – General License for Storage of Spent Fuel at Power Reactor Sites

72.210 General license issued.

A general license is hereby issued for the storage of spent fuel in an independent spent fuel storage installation at power reactor sites to persons authorized to possess or operate nuclear power reactors under part 50 of this chapter.

The federal regulations noted above allow Energy Northwest to store spent fuel in an independent spent fuel storage installation at the WNP-2 site under a general license. The general license is subject to the conditions specified in the rule (i.e., those specified in 10 CFR 72.212).

The WNP-2 SCA specifies in Section II.A.4 that it is subject to federal laws and regulations.

II. GENERAL CONDITIONS

A. Legal Relationship

4. This Certification Agreement is subject to federal laws and regulations applicable to the Project and to the terms and conditions of any permits and licenses which may be issued to the Supply System [Energy Northwest] by pertinent federal agencies.

Consistent with the separate regulatory jurisdictions of the NRC and the State of Washington, this SCA amendment request is focussed on aspects of the project that are specific to the State's interest. These include the environmental effects of construction of the physical infrastructure and the operational aspects of the storage system that relate to the environment.

Public Health, Safety, and Welfare (Including Environmental Impacts)

The environmental effects of the storage system are few. The general license granted by the NRC and the cask approval process have been evaluated by the NRC through NEPA. A description of the environmental effects associated with the use of such a system at WNP-2 is included in the attached SEPA checklist and generally described below.

Environmental Reviews by the NRC - NUREG-0575, "Final Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel," August 1979, was issued in support of the final rule promulgating 10 CFR Part 72, "Licensing Requirements for the Storage of Spent Fuel in an Independent Spent Fuel Storage Installation (ISFSI)," which became effective in 1980.

Section 218(a) of the 1982 Nuclear Waste Policy Act includes the following directive:

"The secretary (of DOE) shall establish a demonstration program in cooperation with the private sector, for the dry storage of spent nuclear fuel at civilian nuclear power reactor sites, with the objective of establishing one or more technologies that the (Nuclear Regulatory) Commission may, by rule, approve for use at the sites of civilian nuclear power reactors without, to the maximum extent practicable, the need for additional site-specific approval by the Commission."

After subsequent DOE technical evaluations and based on a review of the available data, the NRC approved dry storage of spent nuclear fuel in a final rule published in the Federal Register on July 18, 1990 (55 FR 29191). The final rule established a new Subpart K within 10 CFR Part 72 entitled "General License for Storage of Spent Fuel at Power Reactor Sites."

In the Statements of Consideration accompanying the final rule for Subpart K (55 FR 29181), the NRC summarized its finding of no significant environmental impact for the new general license rule as follows:

The Commission has determined under the National Environmental Policy Act of 1969, as amended, and the Commission's regulations in subpart A of 10 CFR part 51, that this rule, if adopted, would not be a major Federal action significantly affecting the quality of the human environment, and therefore an Environmental Impact Statement (EIS) is not required. The finding is premised on two actions, which are (i) the licensing of an operating reactor for a particular site for which an EIS has been previously prepared and (ii) the independent certification of spent fuel storage casks for use at any reactor site. Thus, the rule does not add any significant environmental impacts and does not change any safety requirements.

Accordingly, the use of a dry cask storage system under the general license at an operating reactor does not constitute a significant environmental impact as determined by the NRC. In addition, the WNP-2 Facility Operating License Appendix B, Environmental Protection Plan (Nonradiological), anticipates the construction of additional facilities and excludes those activities restricted to the previously disturbed areas.

Before engaging in unauthorized construction or operation activities which may significantly affect the environment, the licensee shall prepare and record an environmental evaluation of such activity. Activities are excluded from this requirement if all measurable nonradiological effects are confined to onsite areas previously disturbed during site preparation and plant construction.

Environmental Assessment of the Dry Cask Storage System - Once construction of the storage yard and roadway has been completed, the environmental effects are limited to heating of the air that passes through the outer storage cask vents and a radiation field that surrounds each cask (Figure 4).

- **Liquid Releases** – The fuel storage canisters are vacuum dried prior to being sealed and do not contain liquids that can leak.
- **Lack of Mechanical Systems** - The units are completely passive and do not rely on any mechanical or electrical devices or cooling systems to fulfill their safety function. Thus, there are no accidents or emergency scenarios that would be initiated because of the loss of a mechanical system.
- **Solid Waste** - There is no solid waste directly generated by the operation of the storage unit. When the inner multipurpose canisters are removed and shipped offsite for final disposal, the outer storage cask will be left behind at the site. These casks can be reused, decontaminated and recycled as scrap, or disposed as low level radioactive waste during plant decommissioning.
- **Gaseous Releases** - There are no gaseous releases due to the fact that the storage canisters are welded shut. Each canister opening is closed with redundant (i.e., two) welded metal seals to prevent leakage. The welds are tested after closure to verify that they do not leak (helium leak detection method). Each canister is filled with helium gas to facilitate cooling within the evacuated canister and to facilitate future leak detection.
- **Temperature** - The outer concrete and steel storage casks have air vents top and bottom to facilitate air cooling by natural convection across the inner surfaces of the fuel storage canister. The maximum air heating for each cask is specified by design and restricted by regulation to be equal to or less than 105°F above the ambient air temperature. Much lower actual temperatures are expected.
- **Radiation** – Each cask will be surrounded by a radiation field after it has been loaded with spent fuel. This field decreases with distance and is dependent on the location of the measuring point with respect to the storage array. For example, a 90-cask array is conservatively estimated to have a radiation field of approximately 5.5 mrem/hr at 10 feet and about 0.58 mrem/hr at 100 feet. 10 CFR 72.104 specifies that under normal operations and anticipated occurrences, the annual dose equivalent to any real individual who is located beyond the controlled area must not exceed 0.25 mSv (25 mrem) to the whole body. The Holtec storage system shielding is designed to meet these exposure requirements.

The “controlled” area referenced above is the same as the WNP-2 “exclusion” area, which is that area around the reactor building described by a circle with a radius of 1950 meters (6397 feet). The exclusion area requirements are defined in 10 CFR 100.3 and are authorized by the facility land lease.

100.3 Definitions

(a) *Exclusion area* means that area surrounding the reactor, in which the reactor licensee has the authority to determine all activities including exclusion or removal of personnel and property from the area. This area may be traversed by a highway, railroad, or waterway, provided these are not so close to the facility as to interfere with normal operations of the facility and provided appropriate and effective arrangements are made to control traffic on the highway, railroad, or waterway, in case of emergency, to protect the public health and safety. Residence within the exclusion area shall normally be prohibited. In any event, residents shall be subject ready removal in case of necessity. Activities unrelated to operation of the reactor may be permitted in an exclusion area under appropriate limitations, provided that no significant hazards to the public health and safety will result.

The radiation field resulting from the storage casks is confined to the WNP-2 exclusion area for which administrative and security controls have been established. Energy Northwest has the authority to control activities and restrict access to those areas around the storage yard as necessary for the protection of public safety. For example, a roadway accessible to the public passes through this area (permitted by 10 CFR 72.106(c) and 10 CFR 100.3(a)) and is subject to the imposition of exclusion area controls by Energy Northwest.

Environmental Effects of Construction - The environmental effects of construction will be similar to those previously experienced during the construction of the plant. Since no new land will be disturbed, effects will be limited to fugitive dust, noise, visual changes, and slight changes in topography produced by soil disposal or borrow of earth materials.

- Fugitive Dust – It is expected that fugitive dust will be produced during the construction of the cask storage yard and upgrade of the transporter road. Dust will be controlled with water application if necessary.
- Noise – The noise of construction equipment is an unavoidable, albeit temporary effect. The storage casks do not use active mechanical systems and do not emit sound.
- Visual Changes – The cask storage yard will ultimately consist of five groups of casks. Each cask is cylindrical in shape and approximately 20 feet tall and 11 feet in diameter. They will be spaced approximately 15 feet apart. Because of their low profile relative to the existing structures, they will produce little visual effect in the existing industrial setting of the power plant. The cask storage facility does not represent an aesthetic degradation of the area, the previous use of which was a materials and equipment storage yard. When all of the spent fuel has been shipped offsite, these casks can be removed from the yard.

Other visual effects will result from the installation of fences, light poles, utility poles, and buildings. Each of these elements is commonly found throughout the site area making this area visually compatible with the rest of the site. The roadway upgrades and storage pad construction are primarily constructed at or below grade and produce no visual impact in this industrial setting.

- Light – The light poles that will be installed surrounding the storage yard will produce additional light at night. Yard lighting is required to meet the federal security standards.

- **Earth Materials** – The excavations of the roadway, storage yard, work pad, and building foundations will produce approximately 26,000 cubic yards of earthen materials for disposal. Most areas will be excavated approximately 24 inches to install the gravel required to support the transport crawler. The storage yard will be excavated approximately 6 feet to establish a good foundation for the pads that will hold the casks.

The transport roadway between the reactor building and the security fencing to the east will not be excavated during the initial construction phase in order to preserve the existing roads next to the plant. It may be necessary in the future to excavate and replace this section of the transport roadway with gravel if the crawler treads begin to degrade the existing surfaces.

The materials excavated during construction will be disposed onsite in previously disturbed areas. Current plans are to place the material in the WNP-2 or the WNP-1/4 landfill areas. These areas were selected because they are borrow pits that were excavated during plant construction. The addition of fill material to these areas will help restore their appearance. Broken pavement, concrete, and steel encountered or produced during the excavations will be disposed in the onsite inert and demolition waste landfill. Fugitive dust generated by this operation will be controlled by water application as necessary.

Fill material will also be necessary. Most of the fill material (graded gravel) will be obtained commercially from an offsite source. Approximately 6,000 cubic yards of local borrow materials will be obtained from the landfill areas at either WNP-1/4 or WNP-2. It has been determined that the excavated material will not be suitable for reuse as structural fill.

Emergency Plans - In 10 CFR 72.32(c)(2) the NRC acknowledges the emergency plans that have been developed at power reactor sites.

72.32 Emergency Plans

(c) For an ISFSI that is:

(1) located on the site, or

(2) located within the exclusion area as defined in 10 CFR 100, of a nuclear power reactor licensed for operation by the Commission, the emergency plan required by 10 CFR 50.47 shall be deemed to satisfy the requirements of this section.

Monitoring Program

In accordance with NRC and state requirements (EFSEC Resolution No. 260), an existing radiological environmental monitoring program (REMP) monitors radioactivity in the environment around WNP-2. To confirm dose projections from the cask storage yard, this program will be augmented with additional direct radiation dosimeters (i.e., thermoluminescent dosimeters or TLDs). Figure 5 shows the locations of the existing REMP TLDs in the vicinity of the plant. A couple additional TLDs were installed in 1998 near the perimeter of the proposed cask storage yard to verify the baseline radiation field that exists during plant operation.

No other parameters or pathways are proposed for radiological monitoring at the storage yard because there are no effluents and the existing REMP already provides comprehensive monitoring throughout the site area.

Non-radiological environmental monitoring is not proposed because there are no planned effluents. NRC requirements specify that the air vents must be periodically verified to be free of blockage. Energy Northwest has elected to install temperature-monitoring devices as an alternative to visual inspections of the vents. This monitoring system will be installed under NRC requirements to verify the correct operation of the storage casks. A secondary benefit of this system is the avoidance of routine radiation exposure by using temperature monitoring equipment instead of visual inspections by plant personnel.

Schedule

Construction of the project support facilities (e.g., equipment storage building) will begin as soon as EFSEC authorization is received. The current project schedule (Figure 6) calls for the remaining construction to occur in calendar year 2001. The initial "dry run" test of the storage system is scheduled for late 2001. The first cask loading campaign is scheduled for 2002 following the successful completion of testing.

The construction of the storage yard is planned to occur in two phases. A two-pad storage yard will be initially constructed (Figure 2). When this yard is nearing capacity (18 casks per pad), three additional pads will be constructed to bring the yard to its intended capacity of 90 casks (Figure 3). It is intended that the approval of this amendment request will authorize the entire 90-cask facility and that no additional authorization will be required to initiate phase two construction.

As noted above, the transport roadway between the reactor building and the security fence will not be initially reconstructed in order to preserve the existing pavement in this area. If it turns out that this area needs to be upgraded, it will be replaced with the gravel roadway used elsewhere along the transport route. It is intended that this SCA authorization will include this future activity.

Conclusion

Energy Northwest is augmenting the existing WNP-2 spent fuel storage system with a pre-approved dry cask storage system under a NRC general license. Because the NRC has reserved the exclusive right to license spent fuel storage in agreement states, state jurisdiction is necessarily restricted to the direct effects on public safety and the environment resulting from the construction of the storage system. In addition to the temporary effects of construction, the primary effects produced by the storage casks are those of heated air and the attendant radiation field that surrounds the storage cask. The former has no demonstrable effect and the latter is physically and administratively controlled. Monitoring has been proposed to evaluate both effects.

Energy Northwest requests an amendment of its site certificate in accordance with WAC 463-36. Energy Northwest concludes that the proposed activity is consistent with the intent of the original SCA, complies with applicable laws and rules, and is protective of public health and the environment. The requested amendment, in the opinion of Energy Northwest, does not substantially alter the substance of any provision of the SCA nor does it have a significant detrimental effect upon the environment. Accordingly, Energy Northwest believes that the Council can approve this action by resolution (WAC 463-36-070).

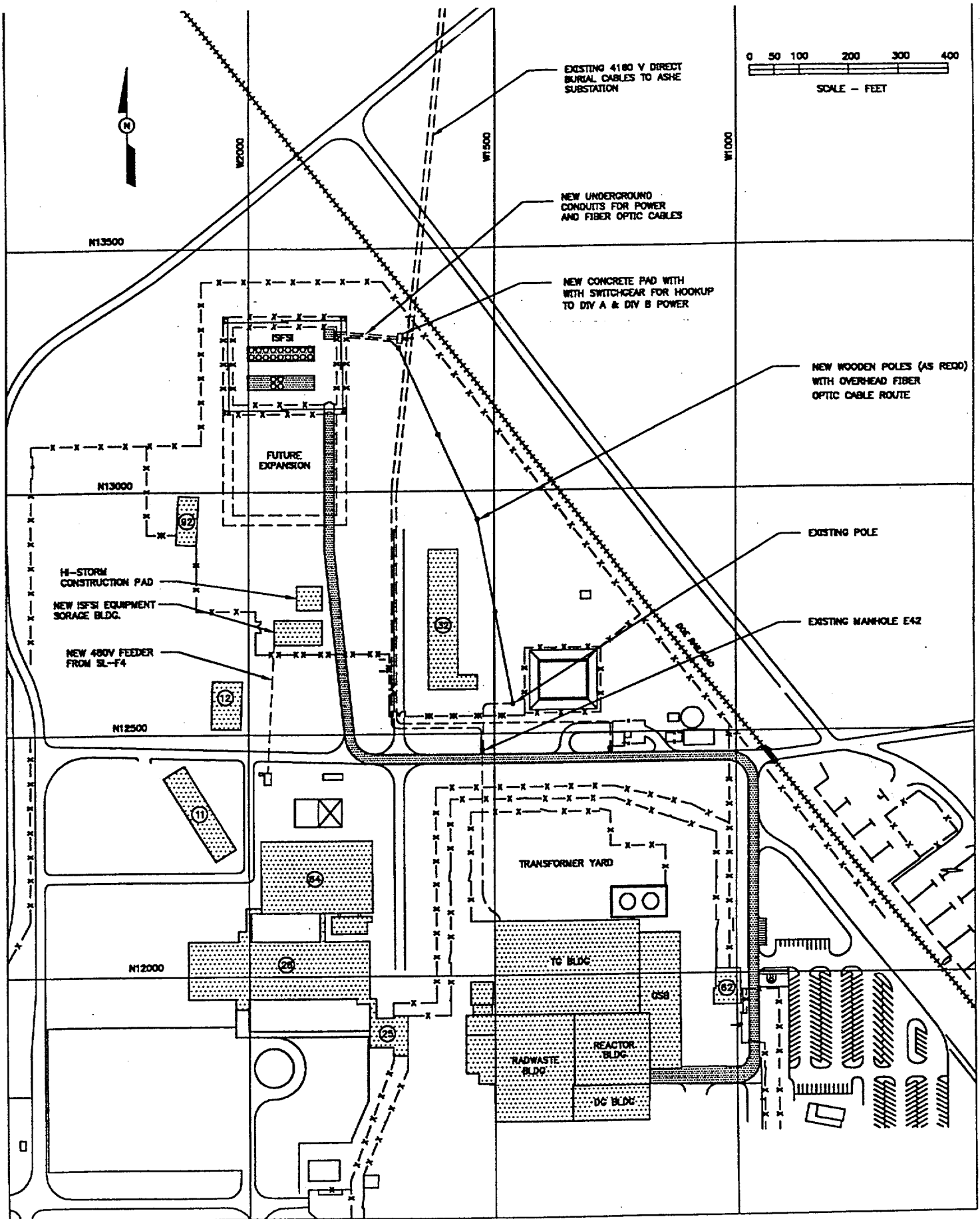


Figure 1. Site Plan for WNP-2 Cask Storage Facility and Transport Roadway

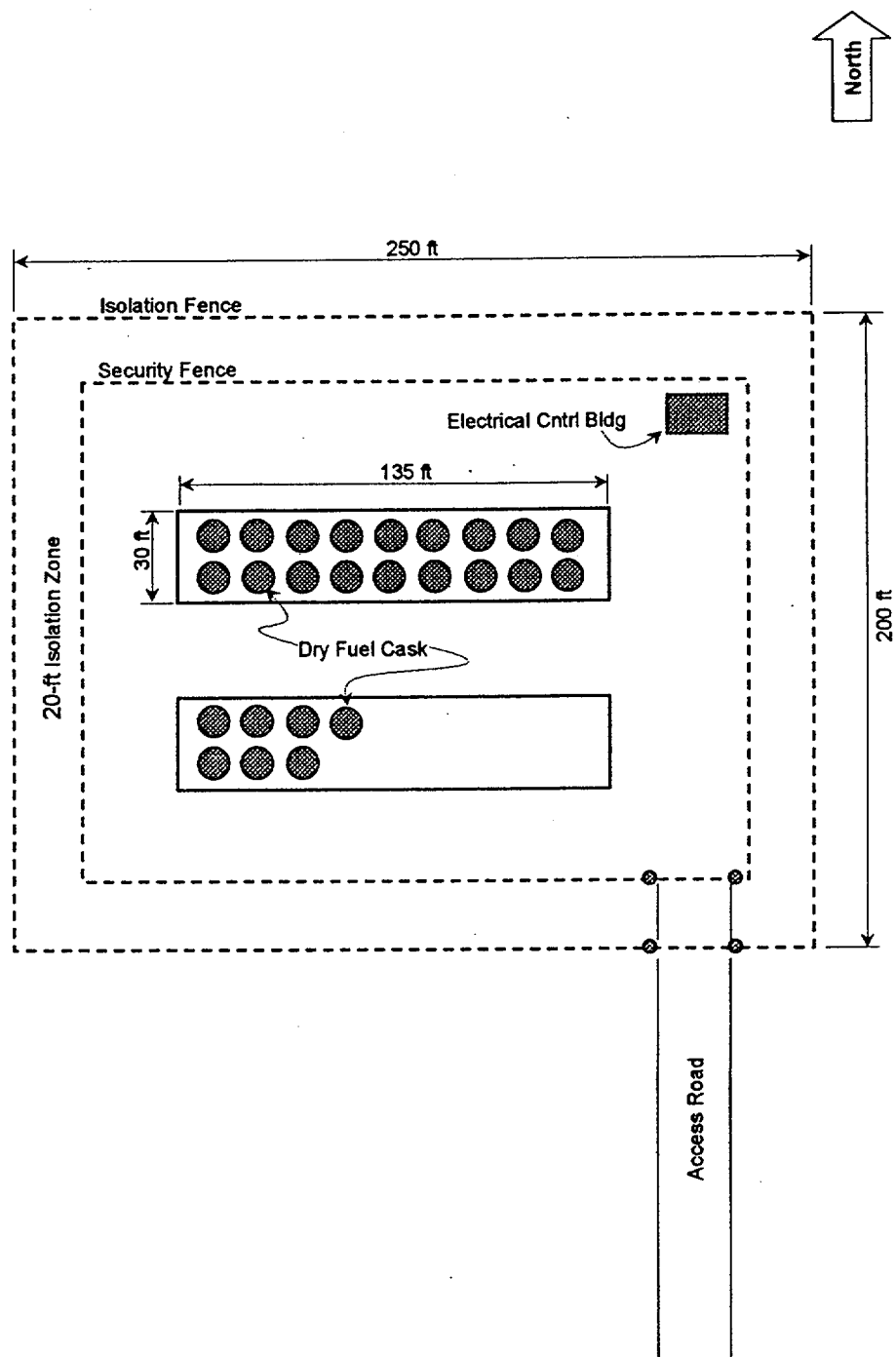


Figure 2. WNP-2 Dry Cask Storage Facility Two-Pad (First Phase) Layout

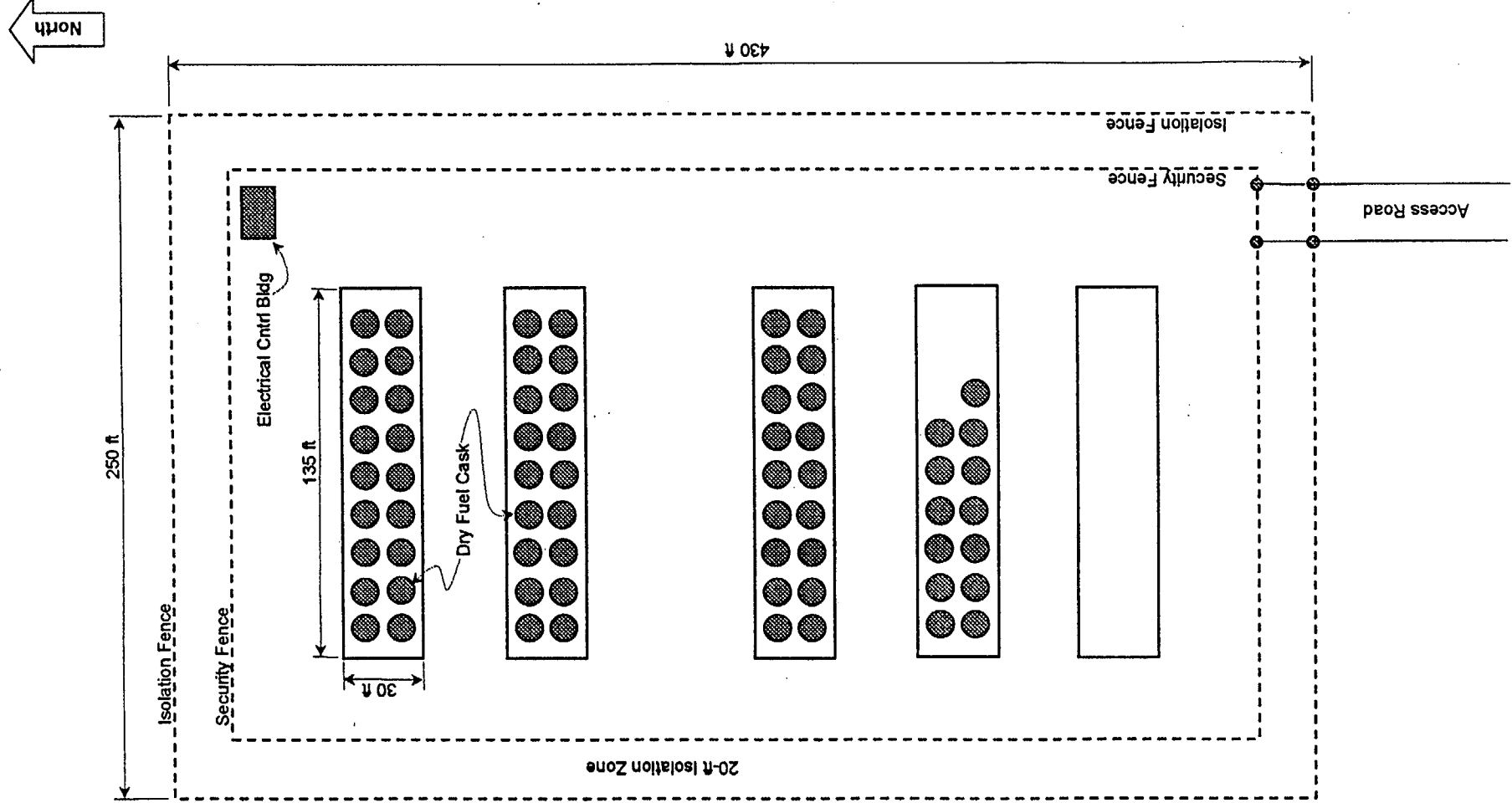


Figure 3. WNP-2 Dry Cask Storage Facility Five-Pad (Second Phase) Layout

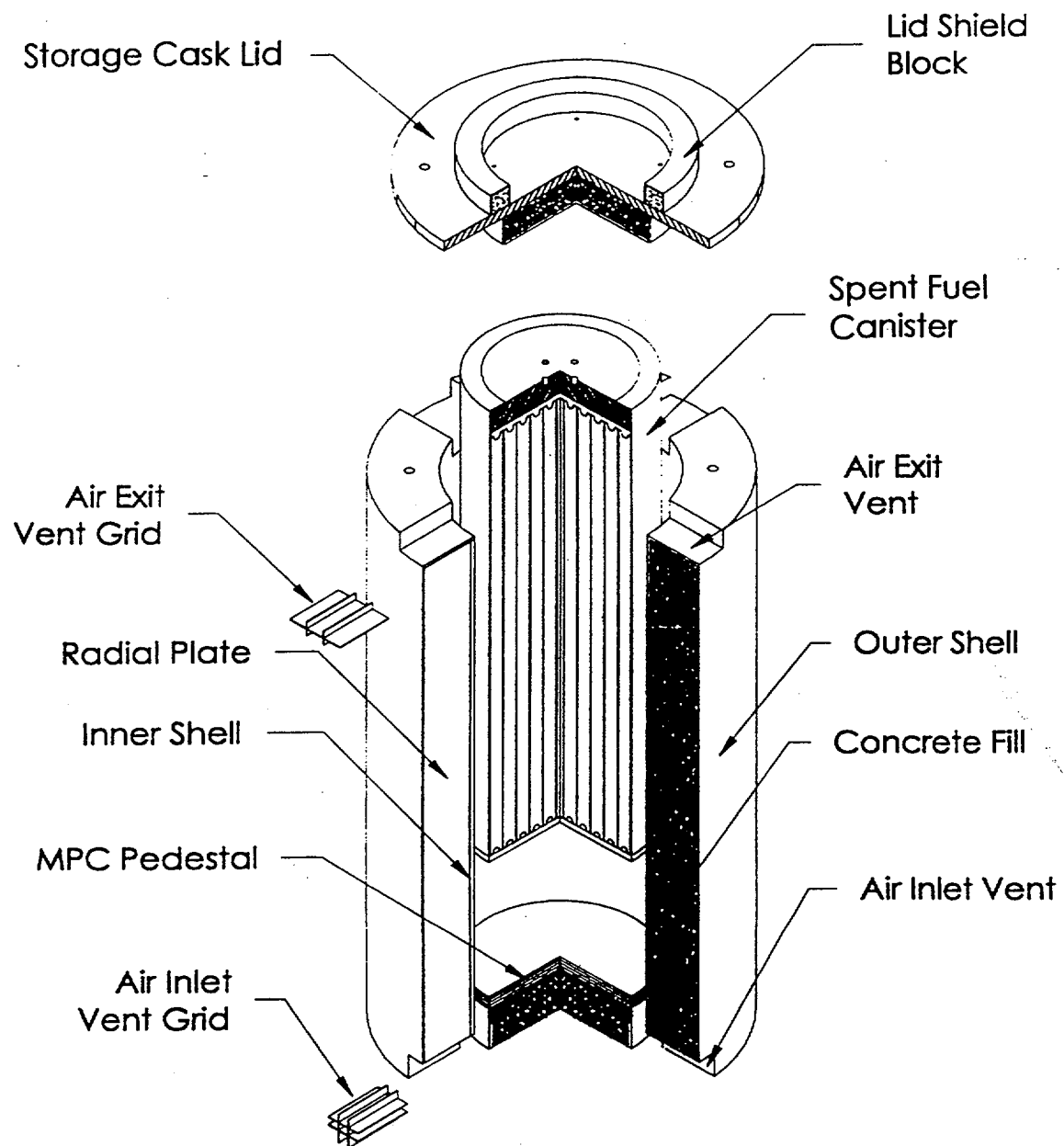


Figure 4. Dry Storage Cask and Spent Fuel Canister Assembly

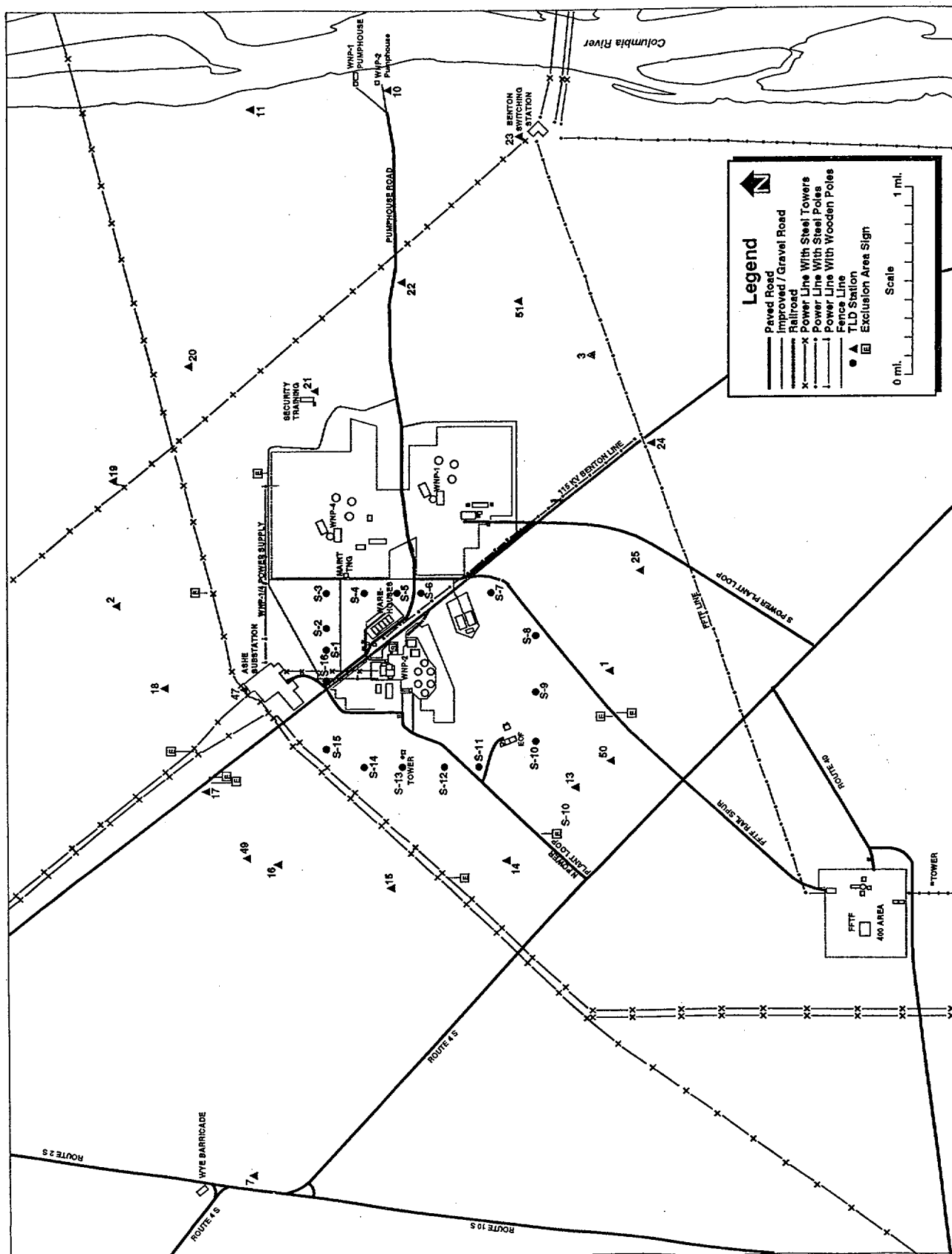


Figure 5. Existing TLD Stations in the Vicinity of WNP-2

SPENT FUEL STORAGE PROJECT CALENDAR YEAR OVERVIEW

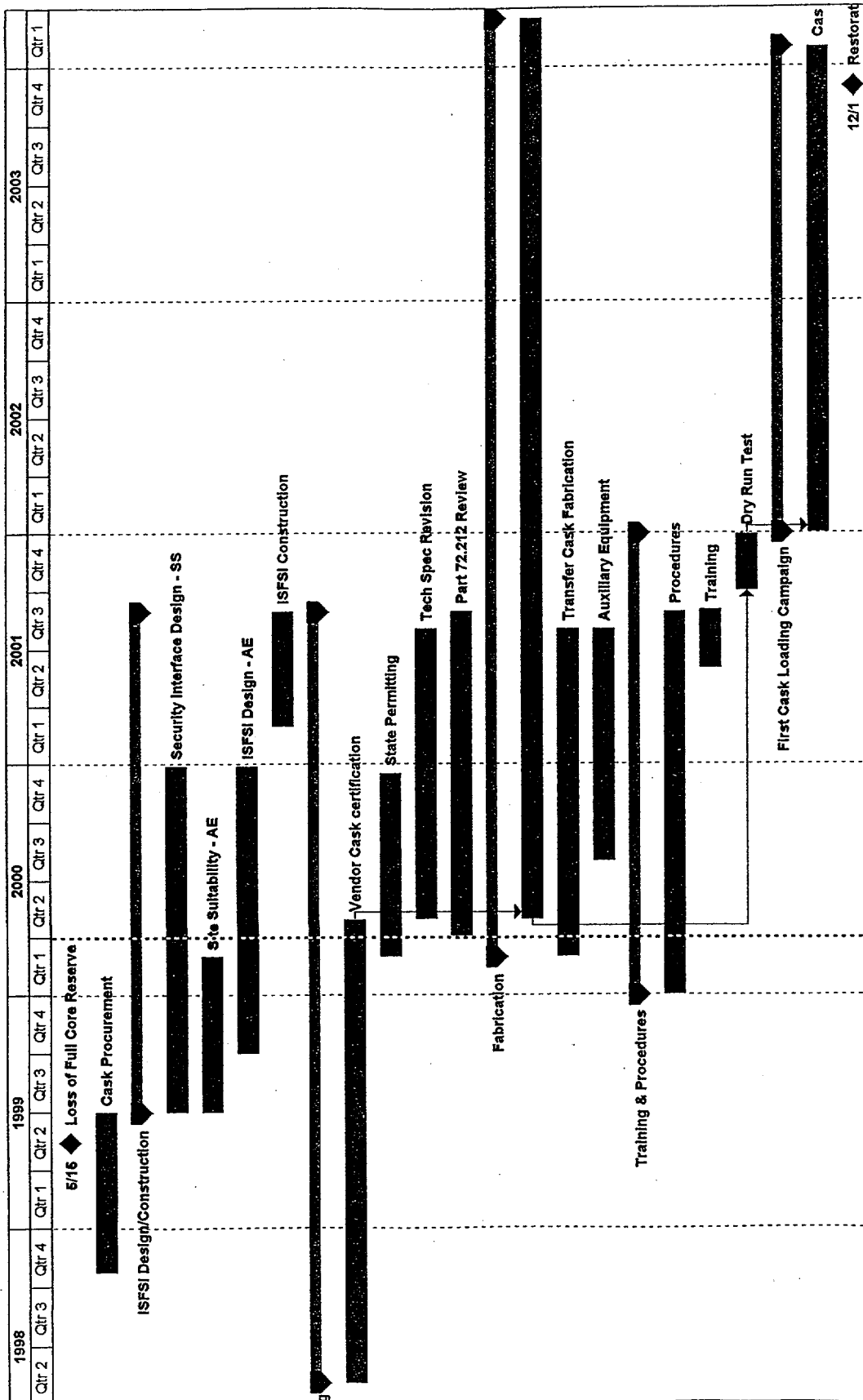


Figure 6. Project Schedule for the WNP-2 Dry Cask Storage Facility