U.S. NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS

SPENT FUEL PROJECT OFFICE

ENVIRONMENTAL ASSESSMENT RELATED TO THE CONSTRUCTION AND OPERATION OF THE TROJAN INDEPENDENT SPENT FUEL STORAGE INSTALLATION

DOCKET NO 72-17
PORTLAND GENERAL ELECTRIC CORPORATION

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1.0 INTRODUCTION

1.1 DESCRIPTION OF THE PROPOSED ACTION

By application dated March 26, 1996, as supplemented, Portland General Electric Company, et al., (PGE or the applicant) requested a license from the U. S. Nuclear Regulatory Commission (the Commission) to construct and operate an Independent Spent Fuel Storage Installation (ISFSI) on the site of the Trojan Nuclear Plant (TNP) in Columbia County, Oregon. An ISFSI or some other system for the storage of spent nuclear fuel is needed for PGE to continue decommissioning activities at TNP. This Environmental Assessment (EA) addresses the expected environmental impacts associated with the proposed construction and operation of the ISFSI on the TNP site.

PGE has selected a dry storage system using Sierra Nuclear Corporation's TranStor Storage System. The TranStor Storage System is a vertical dry storage system which utilizes a ventilated concrete storage cask and a seal-welded steel basket to store spent nuclear fuel assemblies, fuel debris, and greater than Class C (GTCC) waste, which were generated at the TNP during its operation. (GTCC waste consists of activated core components composed mainly of segmented reactor vessel internals.)[1]

The license for an ISFSI, issued under 10 CFR Part 72, is for 20 years. However, the licensee may seek to renew the license, if necessary, prior to expiration.

1.2 BACKGROUND INFORMATION

TNP was shut down on November 9, 1992, and on January 27, 1993, PGE notified the NRC of the decision to permanently cease power operation. PGE began final defueling of the reactor on January 24, 1993, with defueling completed on January 27, 1993. The fuel is currently stored in the spent fuel pool. The TNP 10 CFR Part 50 operating license has been converted to a possession only license, which allows the licensee to maintain, but not operate, the facility. On January 25, 1995, the licensee submitted an application to terminate the possession only license. The application for termination included a proposed decommissioning plan and a supplement to the environmental report. The licensee proposed to decommission the facility using a dismantlement or DECON approach as defined in the "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities," NUREG-0586, dated August 1988.

[1] At present, licenses issued under the Commission's regulations at 10 CFR Part 72 are limited to the storage of spent fuel and other radioactive materials associated with spent fuel storage in an ISFSI. Storage of GTCC waste is not within the scope of a Part 72 license. However, on November 2, 1995, PGE submitted a petition for rulemaking requesting that the Commission amend its Part 72 regulations to specifically provide for the storage of GTCC waste in an ISFSI. See 61 Fed. Reg. 3619 (1996). Consideration of the inclusion of this type of waste in the EA for the Trojan ISFSI should obviate the necessity for revisiting the environmental impacts of storage of GTCC waste at Trojan if the Commission grants PGE's petition and amends its regulations as requested.

1.3 PREVIOUS ENVIRONMENTAL ASSESSMENTS AND SUPPORTING DOCUMENTS

This EA for the proposed action relies upon several environmental documents, with independent assessment of data, analyses, and results. The following documents were utilized: (1) "Trojan Independent Spent Fuel Storage Installation Environmental Report," PGE-1070, March 26, 1996, as supplemented by letter dated May 22, 1996; (2) "Final Environmental Statement Related to the Operation of the Trojan Nuclear Plant," August 1973; (3) Trojan ISFSI License Application (PGE-1068), Safety Analysis Report (PGE-1069), Decommissioning Plan (PGE-1061), and related documentation; (4) "Environmental Assessment by the U. S. Nuclear Regulatory Commission Related to the Request to Authorize Facility Decommissioning, Trojan Nuclear Plant," December 1995; (5) "Final Generic Environmental Impact Statement on Handling and Storage of Spent Light-Water Power Reactor Fuel," NUREG-0575, August 1979.

Staff reviewed the decommissioning plan and supplement to the environmental report. By letter dated December 18, 1995, the staff determined the decommissioning plan to be acceptable in that the plan demonstrates that decommissioning will be performed in accordance with the regulations of 10 CFR 50.82 and will not be inimical to the common defense and security or to public health and safety. The staff also determined that there are no significant environmental impacts associated with the proposed decommissioning plan, and decommissioning will not have a significant effect on the quality of the human environment. The environmental impacts of the construction and operation of the ISFSI were not included in that review.

Additional references may be found in Section 10.0 of this EA.

2.0 NEED FOR THE PROPOSED ACTION

PGE's plans for decommissioning TNP include decontamination and dismantlement of contaminated structures, systems, and components. To facilitate decommissioning, the spent fuel and other contents of the spent fuel pool must be relocated. PGE determined an ISFSI would be the most economical method for the temporary storage of the spent fuel until a U.S. Department of Energy (DOE) or other offsite facility is available. Relocating the spent fuel to an ISFSI would allow TNP to proceed with decontamination and dismantlement of the structures, systems, and components without impacting the safe storage of the spent fuel.

3.0 ALTERNATIVES

3.1 PERMANENT FEDERAL REPOSITORY

If a permanent Federal repository were available, the preferred alternative would be to ship the spent fuel to the repository for disposal. DOE is currently working to develop a repository as required by the Nuclear Waste Policy Act of 1982, as amended in 1987 (NWPA). DOE is evaluating a site at Yucca Mountain, Nevada, to determine if it is a suitable location as a high-level radioactive waste repository. It is not likely the DOE will have a licensed repository ready to receive spent fuel before 2010. Although DOE recommended that a Monitored Retrievable Storage (MRS) facility be constructed

and in operation by 1998, the NWPA prohibits siting an MRS before obtaining a construction permit for the repository. Given the uncertainties of schedules for either a repository or MRS, this alternative does not meet the immediate needs of the applicant.

3.2 TRANSSHIPMENT TO OTHER NUCLEAR REACTOR SITES

This alternative would involve shipping the Trojan spent nuclear fuel to another nuclear facility with sufficient storage capacity. The other utility would have to agree to accept the Trojan fuel. Since all the utilities are expected to face spent fuel pool storage shortfalls, they are expected to be unwilling to reduce their own storage capacity. Therefore, this is not considered to be a viable alternative.

3.3 SHIPMENT TO A REPROCESSING FACILITY

There are no existing commercial reprocessing facilities in the United States nor is there the prospect for one in the foreseeable future. While there are reprocessing facilities in operation in the United Kingdom, Germany, and France, the political, legal, and logistical uncertainties associated with trying to ship spent fuel overseas make this alternative not viable.

3.4 OTHER DRY STORAGE METHODS

PGE evaluated dry storage methods of storage-only and dual-purpose. The storage-only method is where the spent fuel is stored in a cask approved for storage only, but the fuel must be transferred to a shipping cask when the fuel is to be shipped offsite. The dual-purpose system is a cask that is authorized for both storage and transportation. PGE determined that a dual-purpose system would meet their requirements, and PGE has taken steps toward this end.

3.5 NO ACTION

The no action alternative would result in PGE leaving the spent nuclear fuel in the spent fuel pool and not proceeding with the decontamination and decommissioning of the entire facility. Maintaining the spent fuel in the fuel pool would mean continued generation of solid and liquid low-level radioactive waste.

3.6 SUMMARY OF ALTERNATIVES

Of the alternatives evaluated, the use of an ISFSI was determined to be the most economical method for the temporary storage of the spent fuel until a DOE facility is available. Based on technical, commercial, and cost evaluations completed by PGE, the Sierra Nuclear Corporation dual-purpose dry fuel storage and transportation system was determined to be the most favorable option for satisfying TNP's interim spent fuel management needs.

4.0 EXISTING ENVIRONMENT

The general environment around the Trojan Nuclear Plant is well characterized as a result of studies conducted in support of the ISFSI license application, as well as the characterizations of geology, hydrology, and soils conducted in support of the reactor licensing application. This section provides a discussion of the existing environment, including land use and terrestrial resources; water use and water resources; socioeconomics and historical, archaeological, and cultural resources; demography; meteorology; geology; seismicity; and soils. An assessment of impacts to the environment because of construction and operational activities is presented in Chapter 6 of this EA.

4.1 SITE LOCATION, LAND USE, AND TERRESTRIAL RESOURCES

The Trojan ISFSI will be located at the site of the TNP. The Trojan site is located in Columbia County, approximately 42 miles north of Portland, in northwest Oregon. The site is located on the western bank of the Columbia River at River Mile 72.5 from the mouth. In this area, the Columbia River is the boundary between the States of Oregon and Washington (Figures 1 and 2).

The nearest Oregon communities to the Trojan ISFSI are the unincorporated towns of Prescott approximately 0.5 mile north; Goble approximately 1.5 miles south-southeast; and the incorporated town of Rainier approximately 4 miles north-northwest. In the State of Washington, the nearest communities are (1) the unincorporated town of Carrolls approximately 2.5 miles north-northwest, and (2) the incorporated town of Kalama approximately 3 miles southeast of the site.

The TNP site is located on 634 acres. The Trojan site consists of three general areas: the former electrical power generation area, a recreational use area, and the natural area. The three areas of the site are defined by natural barriers, such as the river's edge and the basaltic outcrops and hills and existing man-made barriers, such as the railway and highway.

The former power generation facility is located on 30 acres adjacent to the Columbia River. Existing structures associated with the facility include a 492-ft tall cooling tower, 206-ft tall containment structure, and control, turbine, auxiliary, and fuel buildings. The intake structure, shop, and warehouse facilities also are located in this area. A visitor's center, that is no longer in use, was constructed at the western side of the site adjacent to U.S. Highway 30. A 26-acre reflecting lake is located between the main plant buildings and the highway.

Approximately 140 acres of the site have been set aside for recreational uses. Picnic areas, hiking and bicycle paths, parking areas, and a 28-acre recreational lake are provided in this area. The remaining acreage of the site has been left in its natural state.

U.S. Highway 30 parallels the western boundary of the site. U.S. Highway 30 is a two-lane highway that connects the communities along the Columbia River and carries moderate passenger and freight traffic.

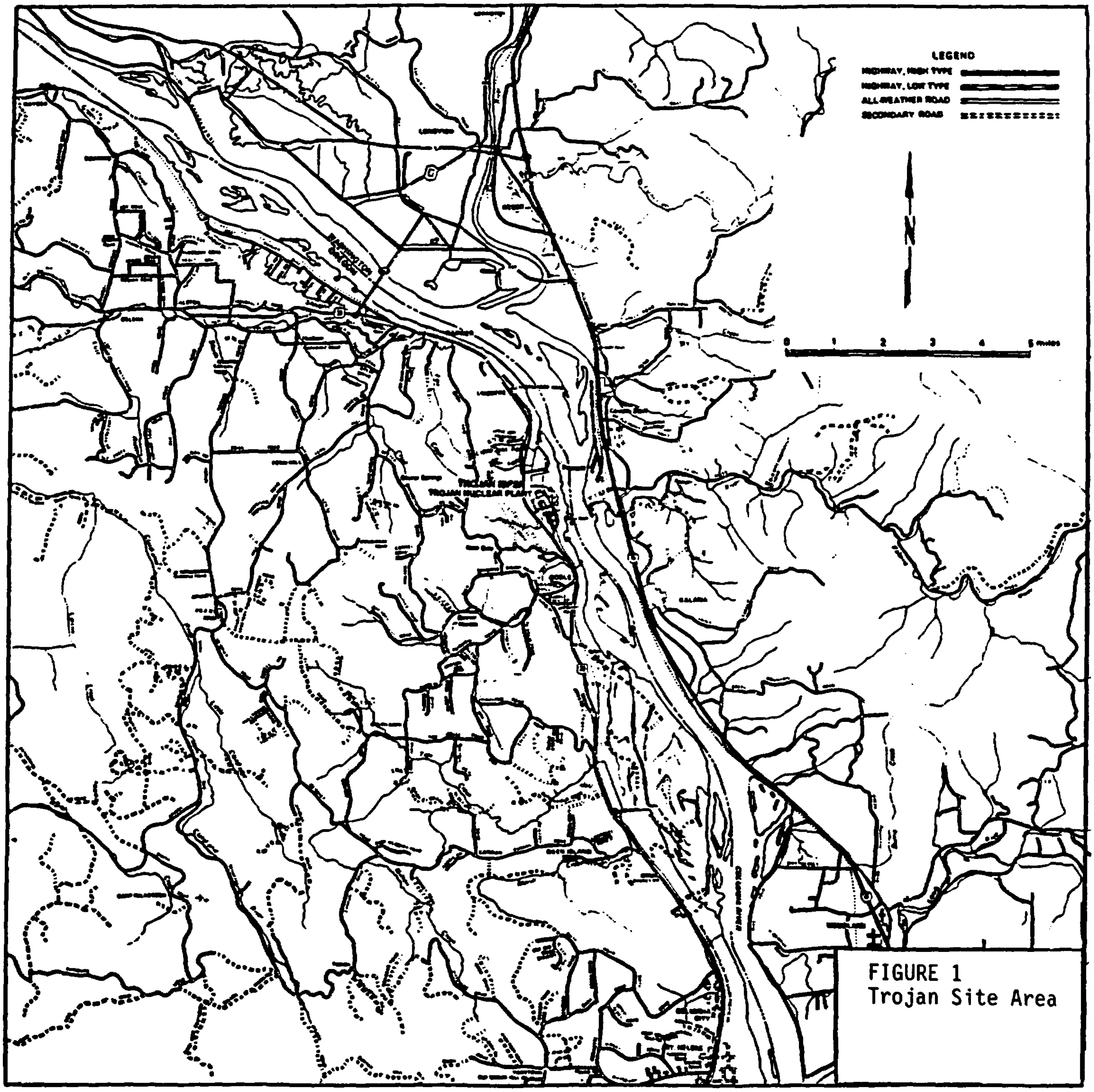

FIGURE 1
Trojan Site Area

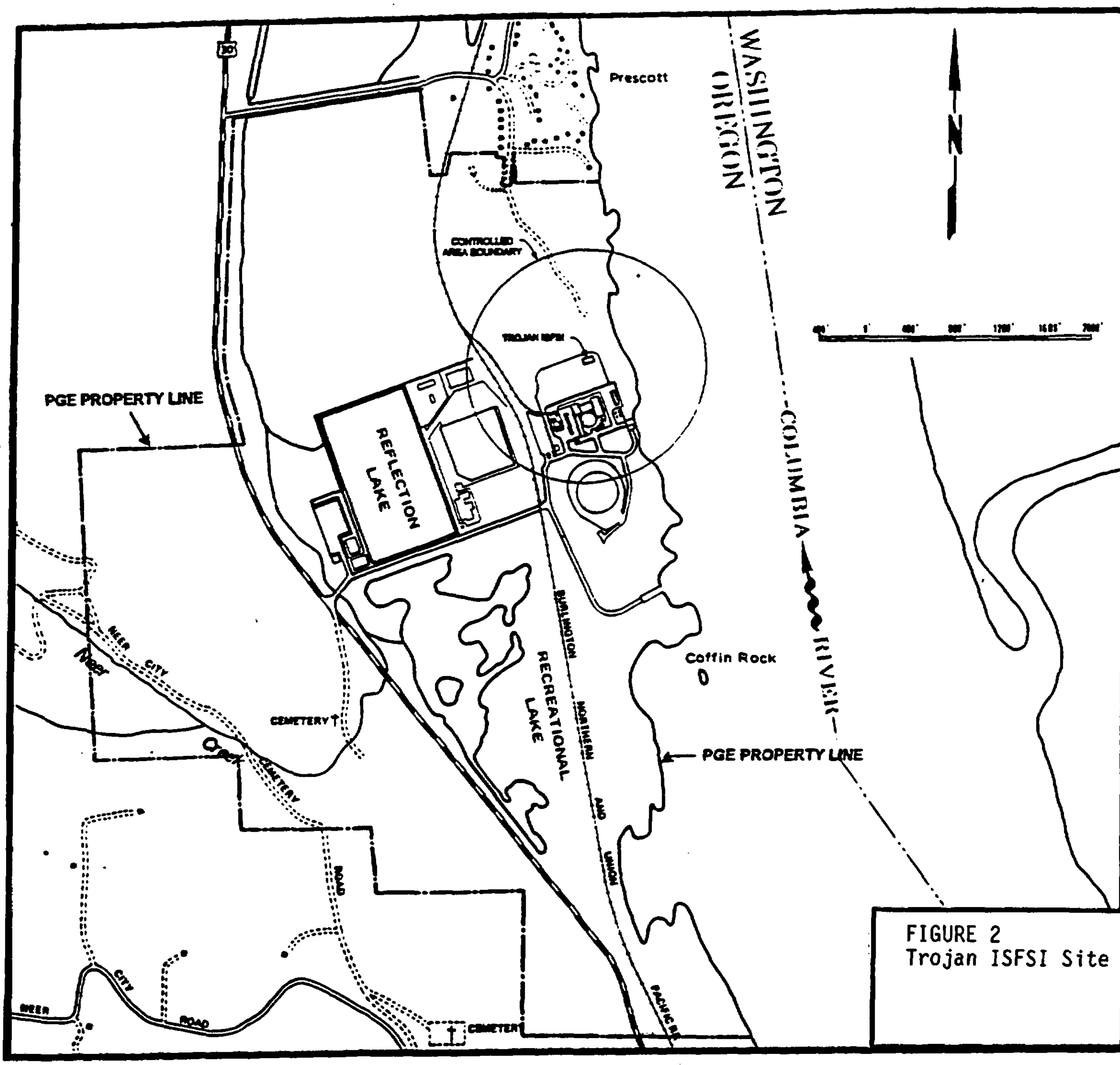

FIGURE 2
Trojan ISFSI Site

Burlington Northern, Inc. owns a railroad right-of-way through the Trojan site. Approximately 1 mile east of the plant site, across the Columbia River in Washington State is another Burlington Northern, Inc.-owned railroad track.

The major portion of the area within a 50-mile radius of the site is timber, owned and controlled by the federal and state governments and private corporations. The terrain is quite rough and generally suited only for tree farming and related forestry operations.

There are 29 species that have been identified as either threatened or endangered in the State of Oregon. There are 21 animal species and 8 plant species. The following is the list of species:

Animals

Butterfly, Oregon silverspot (*Speyeria zerene hippolyta*)
Chub, Borax Lake (*Gila boraxobius*)
Chub, Hutton tui (*Gila bicolor ssp.*)
Chub, Oregon (*Oregonichthys* (=*Hybopsis*) *crameri*)
Dace, Foskett speckled (*Rhinichthys osculus ssp.*)
Deer, Columbian white-tailed (*Odocoileus virginianus leucurus*)
Eagle, bald (*Haliaeetus leucocephalus*)
Falcon, American peregrine (*Falco peregrinus anatum*)
Goose, Aleutian Canada (*Branta canadensis leucopareia*)
Murrelet, marbled (*Brachyramphus marmoratus marmoratus*)
Owl, northern spotted (*Strix occidentalis caurina*)
Pelican, brown (*Pelecanus occidentalis*)
Plover, western snowy (*Charadrius alexandrinus nivosus*)
Sucker, Lost River (*Deltistes luxatus*)
Sucker, Warner (*Catostomus warnerensis*)
Sucker, shortnose (*Chasmistes brevirostris*)
Trout, Lahontan cutthroat (*Oncorhynchus* (=*Salmo*) *clarki henshawi*)
Turtle, green sea (*Chelonia mydas*) [Note: sea turtles are in the National Marine Fisheries Service jurisdiction only within Oregon]
Turtle, leatherback sea (*Dermochelys coriacea*)
Turtle, loggerhead sea (*Caretta caretta*)
Turtle, olive (=*Pacific*) ridley sea (*Lepidochelys olivacea*)

Plants

Marsh sandwort (*Arenaria paludicola*)
Applegate's milk-vetch (*Astragalus applegatei*)
Water howellia (*Howellia aquatilis*)
Western lily (*Lilium occidental*)
Bradshaw's desert-parsley (=*lomatium*) (*Lomatium bradshawii*)
MacFarlane's four-o'clock (*Mirabilis macfarlanei*)
Nelson's checker-mallow (*Sidalcea nelsoniana*)
Malheur wire-lettuce (*Stephanomeria malheurensis*)

Only two species of endangered animals have been identified on the Trojan site. A pair of American peregrine Falcons have been observed nesting on the Trojan cooling tower. The cooling tower, no longer in use, is located more than 800 feet from the proposed Trojan ISFSI site. The U.S. Fish and Wildlife Service has been notified of the presence of these Falcons at the Trojan site. Additionally, the Trojan site is within the range of the Columbian white-tailed deer, which are protected by both federal and state laws. Operation of the proposed Trojan ISFSI will not impact the deer, and no hunting is permitted on the Trojan site.

4.2 WATER USE AND AQUATIC RESOURCES

The eastern boundary of the Trojan plant site is the Columbia River. The Columbia River serves as a deep-sea access channel to ports upstream of the Trojan site. Waterborne deep-draft traffic uses the 40 ft-deep ship channel that approaches within 400 ft of the southern end of the site. Approximately 2300 ocean-going vessels pass the Trojan site every year. Major outbound cargoes consist of wheat and logs. Inbound cargo consists of petroleum, foreign car imports, iron and steel products, and ores. Major port facilities located near the site are at Longview, Washington, and Portland, Oregon.

The TNP site is located on an impervious rocky ridge that is bounded on one side and end by the Columbia River and on the other side and end by an old river channel which has been completely filled with impervious sediments. The rock on the ridge is moderately fractured, but the joints have been sealed by impervious materials. In 1989, PGE was authorized to drill two wells on the Trojan site. The water from these wells is for industrial use. The maximum combined withdrawal from the two wells is 1.5 cfs.

Only a few domestic-use wells exist in the area. During operation of TNP, these wells were sampled as part of the Trojan Operational Environmental Radiological Surveillance Program. Analysis of these well water samples indicated that the levels of tritium and gamma-emitting radionuclides were below the minimum sensitivity requirements of the sampling program.

4.3 HYDROLOGY

The actual Trojan ISFSI site will be located on a rocky ridge next to the Columbia River. Prior to the site preparation for the TNP, the ridge was generally above elevation 75 ft mean sea level (msl), with peaks up to 143 ft msl. A section of the ridge was excavated to 45 ft msl as a base for the power plant, and another area was excavated to 90 ft msl for the cooling tower.

At the plant site, the Columbia River is one-half mile wide. The Columbia River has an annual average flow of approximately 230,000 cubic feet per second (cfs). The corresponding average current velocity is 1.8 ft per second (fps). Generally, high river flows are approximately 550,000 cfs in mid-June. Low river flows generally range from 120,000 to 170,000 cfs and usually occur from August to October. Columbia River floods have been divided into two categories: (1) spring floods caused by the melting snowpack usually from the upper reaches of the Columbia River Basin east of the Cascades, and (2) winter

floods caused by intense rain occasionally augmented by melting snowpack in the Willamette and other basins west of the Cascades.

The maximum natural or unregulated flood on record for the Columbia River is the flood of 1894. The peak discharge, measured at The Dalles, Oregon, for the river was 1,240,000 cfs. The cause of the flood was due to heavy rainfall and the subsequent rapid melting of heavy snowpacks. On February 8 and 9, 1996, the Columbia River had an estimated river flow of between 850,000 and 900,000 cfs near the Trojan site. At this time, the maximum crest of the river was approximately 22.5 ft, which is significantly lower than the 45-ft elevation of the lowest bank on the Trojan site. This flood was caused by warm rainfalls from the mid-Pacific Ocean falling on snow in the lower Columbia River Basin.

4.4 SOCIOECONOMIC, HISTORICAL, ARCHEOLOGICAL, AND CULTURAL RESOURCES

An area adjacent to the Trojan barge slip has been identified as having archeological significance due to the presence of Native American artifacts. Agreements regarding preservation of this area are in effect. No building, excavating, or disturbance of that area will be conducted.

There will be minimal socioeconomic impact to the area from construction and operation of the Trojan ISFSI. This area is very industrialized with 21 industrial facilities and the Port of Longview, WA within a 10-mile radius of the Trojan ISFSI site. The additional work force required for the construction and operation of the Trojan ISFSI is less than that required for the operation of the TNP facility. Therefore, the work force is not of sufficient size to affect the socioeconomic characteristics of the local area.

There are no historical sites or cultural resources that will be impacted by construction or operation of the Trojan ISFSI.

4.5 DEMOGRAPHY

The total region is moderately populated, with considerable variation in population density due to the mountainous nature of much of the terrain. Within a 5-mile radius of the Trojan site, there are several small towns and unincorporated communities with populations under 2,000. Based upon the 1990 census data, the population of these towns or communities is as follows:

Rainier, Oregon	1674
Prescott, Oregon	63
Kalama, Washington	1210

The small communities of Goble, Oregon, and Carrolls, Washington, are also located within 5 miles of the site but are not listed as separate population centers in the 1990 census (Figure 3).

POPULATION IN ANNULAR RINGS	
0 – 1	196
1 – 2	473
2 – 3	2139
3 – 4	2677
4 – 5	3845
5 – 10	63751

N

POPULATION WITHIN RADIAL DISTANCE of SITE	
1	196
2	669
3	2808
4	5485
5	9330
10	73081

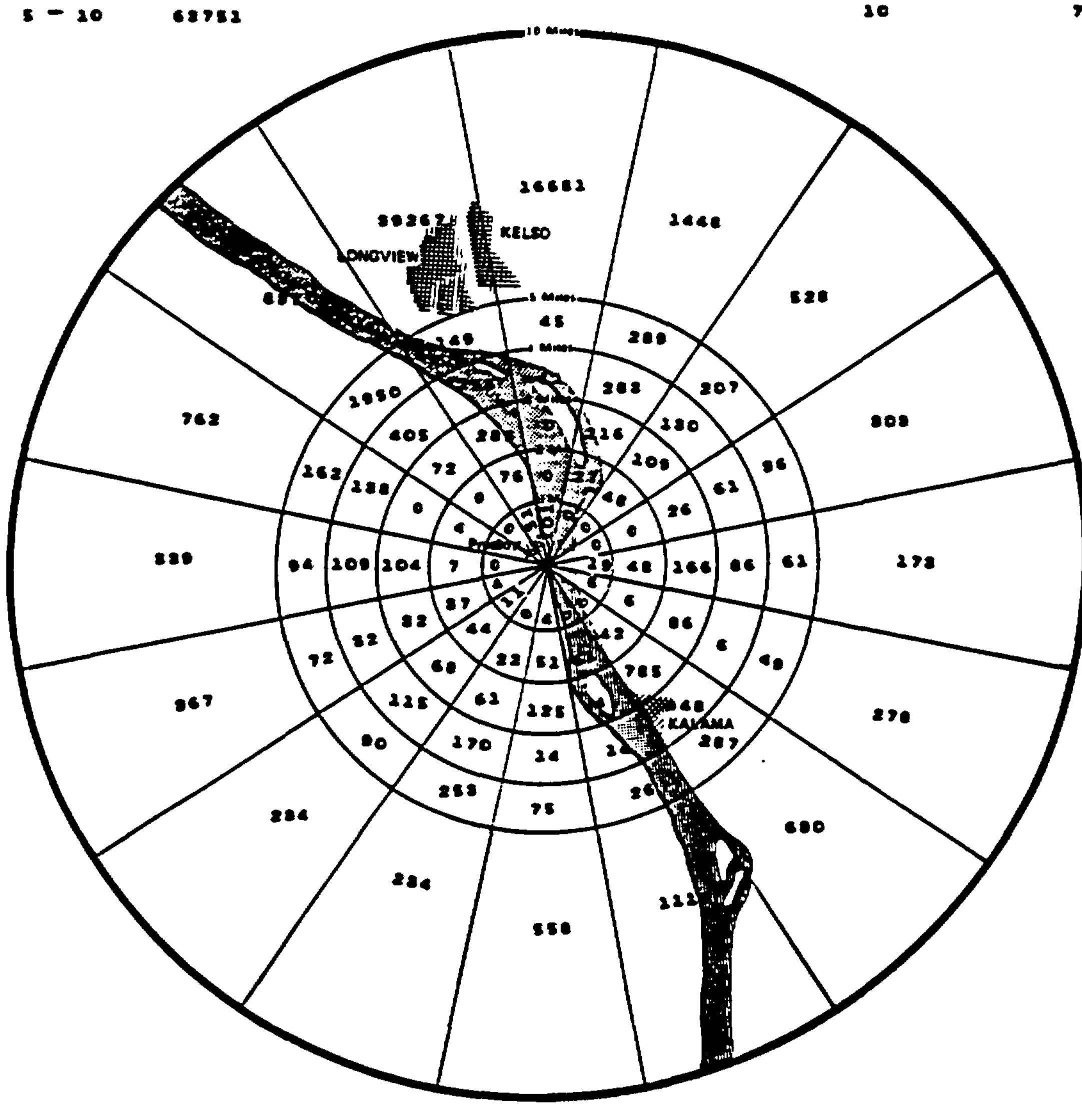

FIGURE 3
1990 Population
Distribution within
10 miles of ISFSI

The communities of Kelso and Longview, Washington, are located approximately 6 miles north of the site and have a combined 1990 census population of 43,319. The closest town in Oregon with a population over 2,000 is St. Helens. St. Helens has a 1990 census population of 7,535 and is located 12 miles south-southwest of the site.

The population for a 10-mile radius of the site is estimated from the 1990 census to be 67,068. Based upon historical factors, the population growth within 10 miles of the Trojan site is approximately 5 percent per decade.

There is a limited influx of people into the 10-mile radius around the site during the summer months, when river conditions are conducive to fishing and recreation. This influx is primarily on the Columbia, Kalama, and Cowlitze Rivers. Prescott Beach Park, located 1 mile north-north west of the site is used for daytime picnicking and fishing. There are no federal or state parks or campgrounds within 10 miles of the site.

4.6 METEOROLOGY

Since the region is sheltered by coastal mountains to the west and the higher Cascade Mountains to the east, the climate is generally mild and is referred to as Pacific Maritime. In winter, there is a prevailing southwesterly flow of moist air from the ocean which dominates the weather. Occasionally, colder, polar air will move down the Columbia River Gorge during the winter, creating most of the freezing weather and snow in the area. Over 80 percent of the precipitation occurs from October through May. In summer, the prevailing winds are northwesterly, and the flow of cool air from high pressure areas of the ocean contributes to a drier season and pleasant temperatures. The driest months are usually July and August.

Regional temperatures are generally mild throughout the year. The average temperature for the winter months is 40°F and for the summer 65°F. Extreme temperatures do occur; on July 30, 1965, and August 8, 1981, the temperature in Portland was 107°F, and on February 2, 1950, the temperature was -3°F.

The region receives substantial annual rainfall. The rain showers are usually of light or moderate intensity and continuous, rather than heavy downpours for brief periods. Severe storms, tornados, and major hail storms rarely occur. Thunderstorms occur during the spring and summer months with a frequency of about one per month. Surface winds seldom exceed gale force and rarely reach higher than 75 miles per hour. The maximum amount of precipitation recorded for a 24-hour period in Portland was 7.66 inches in December 1882. The maximum snowfall measured for a 24-hour period was 16.0 inches during January 1937.

PGE began an onsite meteorological program at the site in 1969 in conjunction with the planned construction of the TNP. The program included wind and temperature instrumentation at four elevations on a 500-foot tower, plus a 30-foot satellite tower by the Columbia River. A third tower, 33-feet high, was later installed near the plant access road. PGE collected onsite meteorological data during the operation of the plant and for a time after permanent shut-down. Since the permanent shutdown of the plant, all

meteorological data collection has been discontinued. In general, the winds at the Trojan site are from the north in the summer and from the south during the winter months. In spring and fall, the wind may blow from either direction depending on the location of the major high and low-pressure areas. The north-south wind patterns at the site correspond to the north-south orientation of the Columbia River valley in this area.

4.7 GEOLOGY AND SEISMOLOGY

Numerous investigations were performed for the original siting of the power plant. These investigations were conducted: (1) to determine the characteristics of the foundation material, especially in regard to suitability for supporting structures; (2) to determine the depth and configuration of the groundwater table; (3) to determine the characteristics of the soil and rock with respect to their effect on the migration of radioactive solutions; and (4) to evaluate the seismicity of the area so the appropriate seismic design parameters would be selected.

The regional geology of the Trojan ISFSI site is classified as the Oregon Coast Range section of the Pacific border physiographic province. The Coast Range is bordered on the north by the Olympic Range and on the south by the Klamath Mountains. The Puget Trough forms the eastern boundary and the Sierra-Cascade Province forms the south-eastern border.

The Cascade Range, east of the site, is comprised of a chain of volcanic cones whose activity spans most of the Tertiary time. Lava flows and pyroclastic deposits range from the Eocene age to recent time. Mt. St. Helens, the volcanic cone most recently active, is the cone closest to the Trojan site.

The foundation rock on the PGE property is part of the Goble series. This series is widespread through parts of northwestern Oregon and southwestern Washington. Marine tuffaceous sandstones and other sediments, derived in part from the erosion of the Goble series, were later deposited in an advancing Oligocene sea. With the retreat of the sea, the rocks were folded and eroded to form an area of moderately low relief. During the Miocene Era, intermittent flows of basaltic lavas covered the eroded Oligocene surface. Troutdale sediments were deposited during the Pliocene period by the ancestral Columbia River. Tectonic activity later caused the folding of both the Columbia River basalt and the Troutdale sediments. Changes in the sea level during and after the Pleistocene era contributed to significant erosion which removed younger geological strata and exposed the older Goble series.

There is evidence of ancient, minor faulting in the area of the PGE property. However, there is no evidence of post-Pleistocene faulting, and the evidence indicates there are no active faults in this area.

A portion of the PGE property is underlain by a north-south steep-sided ridge of volcanic rock that borders the river and rises to a maximum elevation of 134 ft msl. The ISFSI site is underlain with bedrock which is part of the Goble series. The rock in the ISFSI site ridge is often broken by closely spaced fractures and contains weathered zones, some of which are at very deep depths. The ridge's soil cover is usually thin, with frequent rock

outcroppings. Thick alluvial deposits occur in the remainder of the property, with an elevation between 5 and 18 ft msl. Approximately one-half mile west of the site, a north-south trending range of hills rises from the alluvia to elevations greater than 1000 ft msl.

The Trojan ISFSI site is located in an area with moderate seismic activity. The majority of the seismic activity has been concentrated in three areas: (1) about 40 miles east of the site, (2) approximately 25 miles south of the site near Portland, Oregon, and (3) approximately 65 to 120 miles north of the site in the area between Olympia and Seattle, Washington.

The largest, historically recorded shock center within 50 miles of the site occurred on November 5, 1962. It had an epicentral intensity of VII about 35 miles south of the site near Vancouver, Washington. Its intensity was recorded as a VI at Longview, Washington, and Rainier, Oregon, with minimal local damage. On October 12, 1877, an intensity VII earthquake was felt in Portland, Oregon. The epicenter location is uncertain but is believed to have occurred in the southern portion of Portland.

The largest earthquakes within 150 miles of the site were shocks with an intensity of VIII at the epicenter. The first occurred on April 13, 1949, and the epicenter was approximately 70 miles northeast of the site in the Puget Sound. The second occurred on April 29, 1965, also northeast of the site in the Puget Sound but at a distance of 95 miles. At Rainier, Oregon (4 miles north-northwest of the site), the intensity of the April 1949 earthquake was also VIII. At Goble, Oregon (1.5 miles south-southeast), the intensity of this earthquake was only IV.

In 1987, PGE initiated a monitoring program to determine the earthquake hazard along the Cascadia margin, which is the area along the Oregon-Washington-Vancouver Island coast. The results of the program were used to characterize the maximum events that could be expected to occur in the region and the resulting ground motions that may occur at the site. The maximum potential earthquake that could affect the site is called the Seismic Margin Earthquake (SME). A value for the SME peak horizontal ground acceleration of 0.38 g was determined. This is more severe than an earthquake of intensity VIII, which is equivalent to a ground acceleration of 0.25 g, and which was once considered the Safe Shutdown Earthquake (SSE) for the TNP. The SME peak horizontal acceleration of 0.38 g has been taken into consideration for the design of the Trojan ISFSI.

Because there are several inactive volcanoes in the Cascade Range east of the ISFSI site, the significance of renewed volcanic activity was assessed in regard to possible effects on the site. The volcanoes near the site that were considered are:

Mt. St. Helens, Washington: 34 miles, east-northeast
Mt. Adams, Washington: 67 miles, east
Mt. Hood, Oregon: 74 miles, southeast
Mt. Rainier, Washington: 77 miles, northeast

The historical seismicity of these volcanoes was considered as well as the type of any possible future volcanic activity. The TNP Safety Analysis Report concluded that predictions related to future volcanic activity are impossible to make, but if it was to occur, it is extremely unlikely that it would occur without warning or that there would be any significant impact to the Trojan ISFSI site.

5.0 DESCRIPTION OF THE TROJAN ISFSI

The ISFSI system is designed to safely store spent fuel by inserting the spent nuclear fuel into a basket and then into a storage cask. The physical components, operational procedures, and planned monitoring program of the proposed ISFSI are described in the following sections.

5.1 GENERAL DESCRIPTION

PGE has selected the Sierra Nuclear Corporation's TranStor Storage System for the Trojan ISFSI. This system is a vertical, dry storage system consisting of a seal-welded steel basket, ventilated concrete storage cask, and associated transfer equipment. The storage system is a passive ventilation system and is designed to require minimal surveillance.

The ISFSI will consist of a reinforced concrete pad and a maximum of 36 TranStor Storage Systems (Figure 4). However, PGE anticipates having to use only 35 storage baskets and casks. Thirty-three storage baskets and casks will contain PWR baskets for intact spent fuel, failed fuel, and fuel debris. Two storage baskets and casks will contain GTCC waste.

The TranStor Storage System has been designed to permit transferring the basket from a storage cask to a shipping cask once a repository or other facility is available. (The shipping cask will be certified separately under the requirements of 10 CFR Part 71 and will not be evaluated or discussed further in this EA.)

5.2 ISFSI DESIGN

The TranStor Storage System is designed to hold both spent nuclear fuel and GTCC waste. The following sections describe the different baskets used and the other components of the system (Figure 5).

5.2.1 Storage System Baskets

In general, the TranStor Storage System utilizes two types of baskets, the PWR basket and the GTCC basket. Baskets are metal containers that are seal-welded closed. The baskets serve as a confinement boundary for the material stored in the baskets.

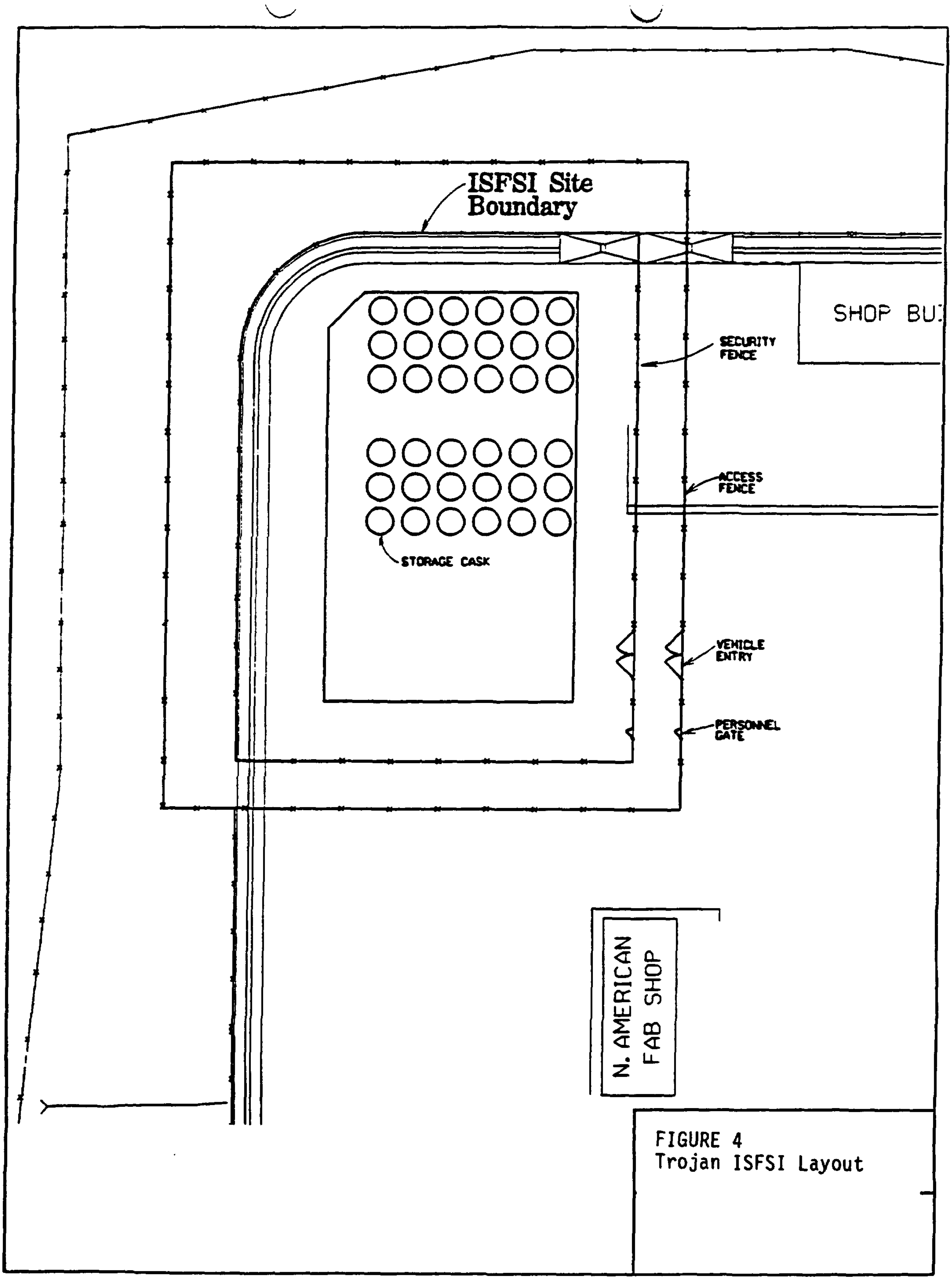

FIGURE 4
Trojan ISFSI Layout

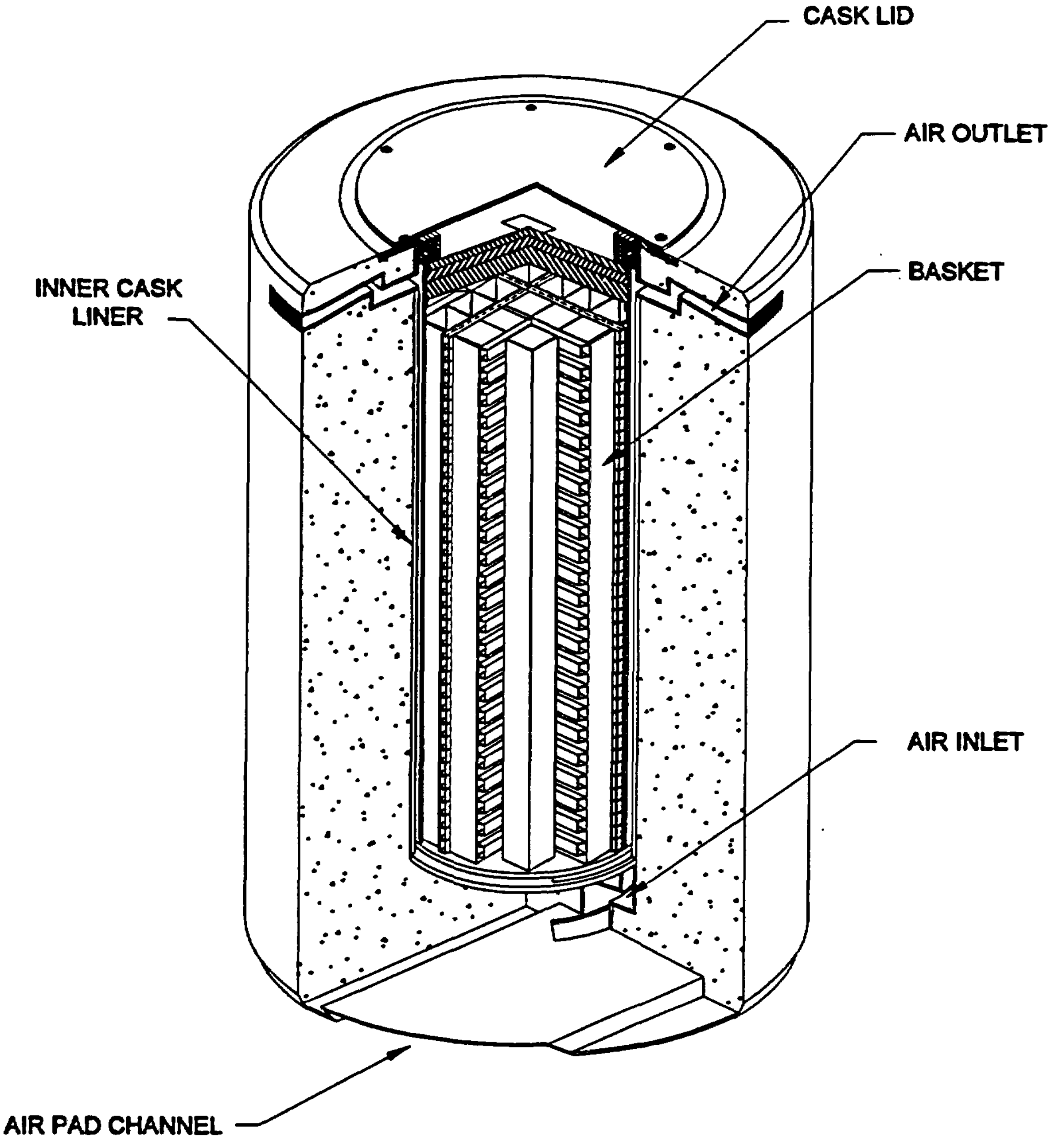

FIGURE 5
Storage System

The PWR basket is a fuel storage canister designed to provide safe storage of intact spent fuel, failed fuel, and fuel debris. This basket consists of an internal sleeve assembly, an outer shell assembly, a shield lid, and a structural lid. The internal sleeve assembly is fabricated from high-strength steel plates formed into an array of 24 square storage sleeves. One PWR basket will hold 24 PWR spent fuel assemblies.

Spent fuel assemblies containing damaged fuel will be placed in a failed fuel can prior to placement in the PWR basket. Fuel debris will be placed into a fuel debris can prior to placement in the PWR basket. The four peripheral cells in each PWR basket can accommodate either failed fuel cans or fuel debris cans, as well as spent fuel assemblies.

GTCC waste is placed in canisters and then placed into the GTCC basket. There is no internal sleeve assembly in the GTCC basket. However, this basket can accommodate 28 individual GTCC canisters.

A basket overpack is provided for use in the event of a leaking PWR or GTCC basket.

5.2.2 Storage System Concrete Cask

The concrete cask provides structural support, shielding, and natural circulation cooling for the basket. The basket is stored in the central steel-lined cavity of the concrete cask. The concrete cask is ventilated and cooled by internal air flow paths that allow the decay heat to be removed by natural circulation around the metal basket wall. Air flow paths are formed by the skid channels at the bottom (air entrance), the air inlet ducts, the gap between the basket exterior and the concrete cask interior, and the air outlet ducts. The air outlet temperature is monitored to confirm proper decay heat removal.

The air inlet and outlet vents are steel lined penetrations that take non-planar paths to minimize radiation streaming.

5.2.3 Transfer Equipment

The transfer cask is used to transfer a loaded basket from the spent fuel pool to the storage cask, to the shipping cask, or to an overpack in the event of a leaking basket. During use, the transfer cask is placed above the storage cask, the retractable doors at the bottom of the transfer cask open, and a loaded basket is hoisted into the transfer cask. The doors are closed, and the transfer cask is positioned above the destination concrete or shipping cask, where the basket is lowered in a process reverse to the process described above.

The transfer station is utilized for basket transfer operations at the Trojan ISFSI site. During transfer to a shipping cask, the concrete cask and shipping cask are placed in the transfer station. The transfer station provides a sliding collar and structural steel rails to prevent the loaded transfer cask from falling or overturning during transfer operations.

To facilitate the moving of a loaded concrete cask from one location to another, an air pad system will be used. The air pad will be inserted under the cask and energized with a standard air compressor. A forklift or other small truck can then be used to move the concrete cask.

5.2.4 Auxiliary Equipment

A skid-mounted vacuum drying system is used to remove the water from the basket (following fuel loading), dry the basket, and backfill with helium. During evacuation, the decay heat from the fuel further helps to remove residual moisture from the basket.

Additionally, a semi-automatic welding system is used to seal-weld the baskets.

5.3 ISFSI OPERATIONS

Fuel loading and basket sealing operations will be performed within the Fuel Building and in accordance with PGE's 10 CFR Part 50 license for the TNP. Performing fuel loading and basket sealing operations in the Fuel Building will allow the use of existing systems and equipment for heavy loads, radiation monitoring and control, decontamination, and auxiliary support systems such as electrical power or service air. After the loaded storage cask is placed on air pallets in the Fuel Building Bay and moved to the ISFSI concrete slab area, operational activities will essentially be limited to monitoring decay heat removal.

Specific procedures will define and control classification criteria, loading sequence, and individual basket and cask inventory. Fuel, fuel debris, and GTCC waste will be visually inspected as it is loaded to verify that each assembly or item conforms to the established classification criteria. Item identification and assembly serial numbers will be verified and recorded. All fuel assemblies will be inspected to verify that the pellets are structurally contained within the cladding. If not, then it will be placed in a Failed Fuel Canister.

As appropriate, additional procedures will control placement and use of impact limiters, allowable travel paths inside the Fuel Building, and limit lifting heights to assure compliance with Technical Specifications.

5.4 RADIATION MONITORING PROGRAM

The TNP's possession-only license granted under 10 CFR Part 50, specifies the requirements for a Radiological Environmental Monitoring Program and a Radioactive Effluent Control Program. The license also requires monitoring of the surrounding area for non-radiological environmental impacts. These monitoring programs are also required by the State of Oregon Administrative Rules. The environmental monitoring program is described in the plant's Offsite Dose Calculation Manual (ODCM). The results of the monitoring programs are compiled and submitted annually to the NRC.

The Trojan ISFSI will be located within the site boundaries of the plant. Since an Environmental Monitoring Program is required for the 10 CFR Part 50 possession-only license, this program will also serve as the operational environmental monitoring program for the ISFSI. However, after plant decommissioning has been completed and the 10 CFR Part 50 license has been terminated by the NRC, PGE will continue to monitor for potential environmental impacts associated with the continued operation of the ISFSI, as required by 10 CFR Part 72 and State of Oregon requirements. Since operation of the ISFSI will not result in any routine release of radioactive gases, liquids, or solid waste, PGE may propose changes to the monitoring programs upon completion of the plant's decommissioning activities and termination of the 10 CFR Part 50 license.

6.0 ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

6.1 CONSTRUCTION IMPACTS

The environmental impacts due to construction of the ISFSI are expected to be minimal since the site of the proposed Trojan ISFSI is located within the current boundary of the TNP industrial area.

6.1.1 Land Use and Terrestrial Resources

The existing terrain will not be altered by the Trojan ISFSI site preparation or construction activities. An existing Radioactive Waste Storage Building, a warehouse building, and a portion of the existing Maintenance Building will be demolished or dismantled for possible reuse. The construction of the Trojan ISFSI will have no impact on land use of the Trojan site.

As part of the original licensing of the TNP, PGE prepared and submitted an environmental report to the NRC addressing the potential impact from construction and operation of the power plant. The NRC reviewed the environmental report and issued a final environmental statement that concluded that there would be no significant adverse effect on the wildlife in the areas surrounding the plant. PGE has monitored the area surrounding the plant for many years while the plant was operating and did not identify any significant adverse effect on the wildlife. The construction activities of the Trojan ISFSI are minor in comparison to the original construction of the plant. ISFSI construction will not disturb any previous undisturbed areas of wildlife habitat.

6.1.2 Water Use and Aquatic Resources

Construction of the ISFSI will have no adverse impact on local water sources. The concrete for the ISFSI pad and storage casks will be delivered to the site ready-mixed. Small quantities of water will be used for cleaning operations and spraying to control fugitive dust. This water will be supplied by water wells located on the Trojan property. No excavated material will be dumped into an existing body of water. Runoff during the construction process will be directed to the existing site drainage system.

6.1.3 Air Quality

There will be minimal impact to the air quality of the area. Fugitive dust generation should be minimal during ISFSI construction activities. The primary source of fugitive dust will be from wind erosion of concrete demolition and any excavated material. During concrete demolition, the surfaces will be sprayed to minimize dust generation. It is anticipated that only minimal excavation will be required because the ISFSI site will be located on level terrain that was previously excavated to near bedrock-level during site preparation of the TNP.

6.1.4 Noise

A moderate amount of noise will be generated as a result of the construction of the ISFSI facility. The noise generated will be caused by trucks, other construction equipment, and miscellaneous noise sources usually associated with light construction. The nearest occupied dwellings are located approximately 0.6 miles north-northwest of the ISFSI. There is a large natural berm, approximately 50 ft in height, that extends along the north and east edges of the ISFSI site. This berm should, at least partially, shield the noise generated during ISFSI construction.

6.1.5 Socioeconomic

The initial site preparations for the Trojan ISFSI will be completed by existing PGE staff, with possible assistance from contract personnel. Moreover, the installation of the security and lightening systems will be completed by existing PGE staff, with possible assistance from contract personnel. Pouring and construction of the ISFSI concrete cask storage pad will involve approximately 12 workers and will last for at least 5 weeks. The TranStor concrete cask will be fabricated over a period of approximately 36 weeks and will require approximately five workers. Due to the highly industrialized nature of the general area, the influx of so few temporary workers will have no significant impact to the socioeconomic makeup of the area.

6.1.6 Radiological Impacts From Construction

There will be minimal radiological impact from construction. While the Trojan ISFSI site is located within the TNP site, it is an area of low background and outside the TNP radiation controlled area. Construction personnel will receive no occupational exposure to radiation; they will only receive a radiation dose due to the natural background of the site.

6.2 <u>OPERATIONAL IMPACTS</u>

6.2.1 <u>RADIOLOGICAL IMPACTS FROM ROUTINE OPERATIONS</u>

The primary exposure pathway to Trojan ISFSI workers and nearby residents as a result of ISFSI operations will be through external exposure to direct and scattered radiation. Radiological dose estimates were calculated for this pathway using conservative and design basis assumptions. For spent nuclear

fuel, the assumptions are: (1) 5-year cooled - 40,000 MWD/MTU (megawatt-days per metric ton uranium) and initial enrichment of 3.20wt percent ^{235}U; (2) 6-year cooled - 45,000 MWD/MTU and initial enrichment of 3.30 wt percent ^{235}U; (3) gamma source for both burnups of 1.856E+17 gammas/second; and (4) neutron source for both burnups of 1.188E+10 neutrons/second. Assumptions used for GTCC waste are weight 29,000 pounds and 1.14E+6 curies. These assumptions result in very conservative dose estimates. The actual doses are expected to be lower.

Because the proposed Trojan ISFSI involves only dry storage of spent nuclear fuel and GTCC waste in dry, sealed storage casks, there will be essentially no gaseous or liquid effluents associated with normal storage operations. Work activities associated with cask loading and decontamination will be conducted under the 10 CFR Part 50 possession-only license, and the radiological impacts from those effluents fall within the scope of impacts from reactor activities.

6.2.1.1 Offsite Dose

The highest annual dose rates from spent fuel storage at the Trojan ISFSI will be delivered during the first year. This is due to the moving of the filled storage casks to the ISFSI pad and the fact that the post-irradiation decay period increases with each subsequent year. Dose rates at the TNP controlled area boundary were calculated for the first year of storage.

The dose to the off-site population will be from direct radiation. Thermoluminescent dosimeters (TLDs) will be placed at the perimeter of, and in the Controlled Area near, the storage casks. TLDs will be read quarterly to monitor radiation levels in the vicinity of the Trojan ISFSI.

Once the Trojan ISFSI is completed and the TNP has been decommissioned, the only significant exposure will be from the Trojan ISFSI. Section 72.104(a) of 10 CFR Part 72, requires that the dose equivalent from normal operations to any real individual located beyond the ISFSI controlled area not exceed 25 mrem/yr to the whole body, 75 mrem/yr to the thyroid, and 25 mrem/yr to any other organ as a result of planned effluent releases, direct radiation for ISFSI operations, and radiation from other uranium fuel cycle operations within the region.

Using very conservative assumptions, the staff estimated the dose to a person standing at the fence of the ISFSI-controlled area would be about 2.6 mrem from air-scattered radiation. This estimated dose also assumes 100 percent occupancy by the individual. The nearest resident is located approximately 0.6 miles north-northwest of the ISFSI. The staff concluded that the estimated annual dose to this individual due to air-scattered radiation is about 1.4 mrem/yr. The estimated population for the year 2010 for the 5-mile area around the ISFSI site is about 9330 (Figure 6). Therefore, the staff estimated that the collective dose due to Trojan ISFSI operations is estimated to be 0.02 person-rem/yr.

The projected doses to the members of the public are well within federal requirements.

POPULATION IN ANNULAR RINGS	
0 – 1	196
1 – 2	473
2 – 3	2139
3 – 4	2677
4 – 5	3845
5 – 10	63751

POPULATION WITHIN RADIAL DISTANCE of SITE	
1	196
2	669
3	2808
4	5485
5	9330
10	73081

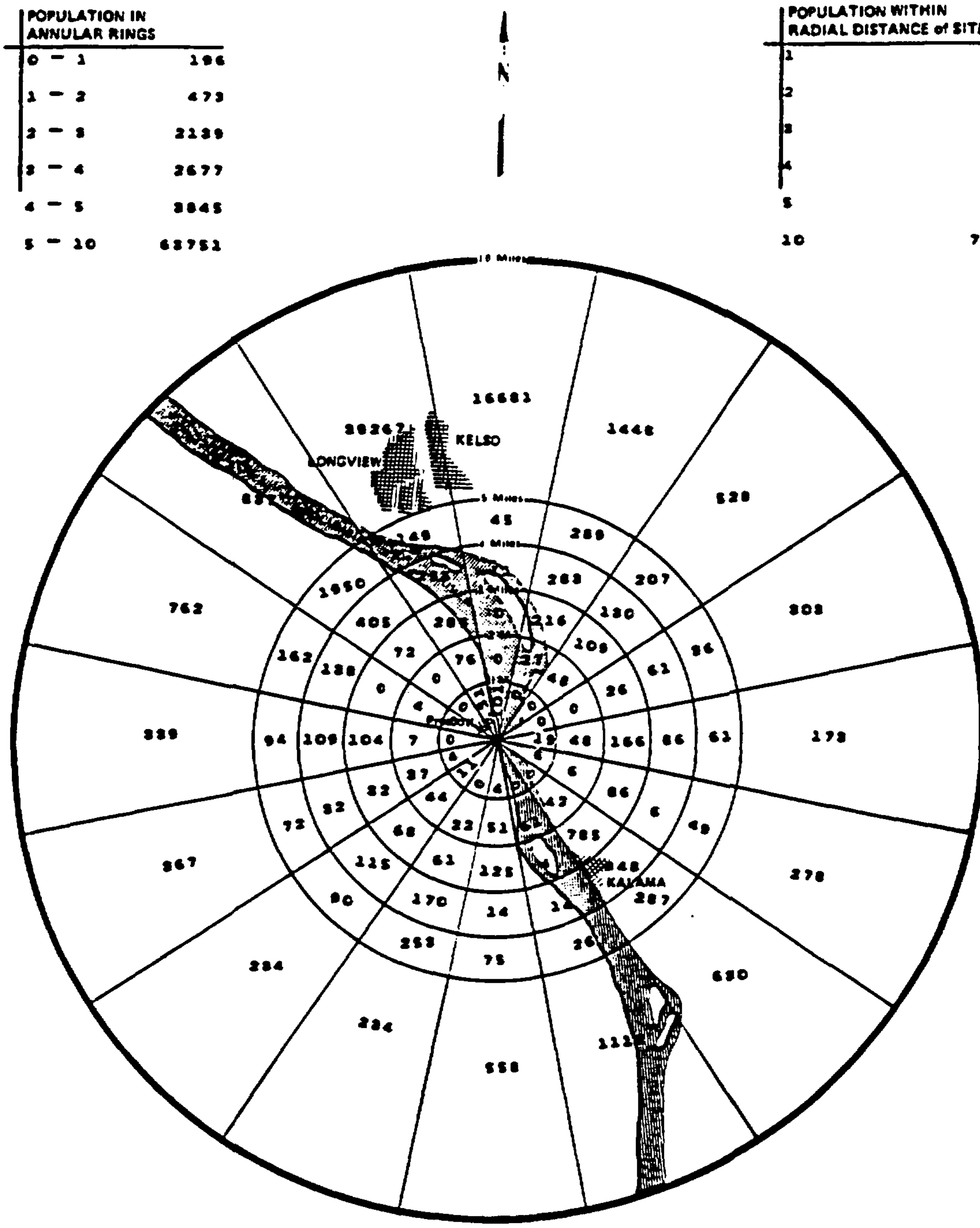

FIGURE 6
2010 Projected
Population within
10 miles of ISFSI

6.2.1.2 Collective Occupational Dose

The occupational exposure due to Trojan ISFSI operations should be less than the exposure resulting from plant operations and decommissioning activities. The storage casks are designed to limit dose rates to operators, inspectors, and maintenance and radiation protection personnel when the casks are being loaded, moved, and stored.

The maximum design dose rates and the calculated working dose rates for loading and handling the storage cask under normal conditions have been evaluated. The results are in Table 6.1.

TABLE 6.1

MAXIMUM EXPECTED DOSE RATES FOR THE FUEL STORAGE CASK SYSTEM			
	Dose Rate (mrem/hour)		
Location	Design Basis Dose	Surface Dose	Working Dose[a]
Transfer Cask Side	300	264	110
Basket Top (Outside Surface of Structural Lid)	200	155	134
Concrete Cask Top	200	103	87
Concrete Cask Side	100	19.6	12.2
MAXIMUM EXPECTED DOSE RATES FOR THE GTCC STORAGE CASK SYSTEM			
	Dose Rate (mrem/hour)		
Location	Design Basis Dose	Surface Dose	Working Dose[a]
Transfer Cask Side	300	134.6	72.1
Basket Top (Outside Surface of Structural Lid)	200	7.8	6.9
Concrete Cask Top	200	3.9	3.2
Concrete Cask Side	100	54.7	32.7

[a]Working dose is the calculated dose 1 meter from the surface.

Conservative estimates of the periodic inspection and surveillance requirements result in a collective dose to ISFSI employees of less than a cummulative occupational dose of 5 rem/yr while the casks are being stored. This is based upon a daily visual inspection of each stored cask, twice daily temperature readings of the air outlet for each cask, quarterly radiation

protection surveys, and annual inspections of the concrete of the storage casks and pad. This is a very conservative estimate, and the actual dose should be much lower.

6.2.2 Radiological Impacts of Accidents

PGE has identified and evaluated events that fall into design basis event categories as specified in ANSI/ANS 57.9. Design events I and II consist of normal and off-normal events that are expected to occur routinely or with a frequency of approximately once-per-year. Design events III and IV consist of infrequent events and postulated accidents that might occur over the lifetime of the ISFSI or hypothetical events that are postulated because their consequences may result in the maximum potential impact on the immediate environment.

Normal and off-normal events and postulated accident conditions are evaluated to assure that the ISFSI components classified as important to safety are capable of performing their required functions. The accidents that have been analyzed to determine the impact are:

1. Failure of fuel pins with subsequent breach of PWR basket
2. Maximum anticipated heat load
3. Concrete cask overturning
4. Tornado
5. Earthquake
6. Pressurization
7. Full blockage of air inlets
8. Explosions of chemicals, flammable gases, and munitions
9. Fires
10. Cooling tower collapse
11. Volcanism
12. Lightning
13. Overpack operations and off-site shipping event
14. Natural gas turbine combined with cycle power plant event

Items 1, 4, and 12 listed above have been determined to have a radiological impact. The impacts from the tornado and lightning would be similar, resulting in a loss of concrete from the storage cask. These events would not result in the release of radioactive material to the environment. However, workers repairing the concrete could receive an increased dose because of radiation streaming through damaged concrete. Because of the higher activity in GTCC waste, the storage cask containing GTCC waste would be the limiting factor. It is estimated that the dose on the exterior wall of a damaged storage cask with GTCC waste would increase from 54.7 mrem/hr to 490 mrem/hr. Based upon two workers taking 1 hour to repair the damage, the dose to each worker would be approximately 490 mrem.

The analyzed accident with the greatest potential to impact the off-site population is the failure of fuel pins with subsequent breach of PWR basket. This event is beyond the design basis for the ISFSI and has been evaluated to define the bounding consequences of the loss of confining barriers. This accident involves the failure of all the fuel rods in the 24 fuel assemblies

in a PWR basket. It is assumed that 100 percent of the fuel rods fail and release 30 percent of the available fission gas to the environment at ground level. It is also assumed that the fission gas is ^{85}Kr. Based upon conservative assumptions, the ^{85}Kr activity released is 24,024 Ci (curies) with a release duration of 7200 seconds. Therefore, the release rate would be 3.4 Ci/sec. Calculating for both skin and whole body dose, the results are found in Table 6.2.

TABLE 6.2

Distance from Concrete Cask (meters)	Skin Dose, mrem (beta and gamma)	Whole Body Dose, mrem (gamma)
100	40000	407
200	12000	116
300	5800	58.1
325	5000	50
330	4800	48.8
500	2300	23.2
1000	749	7.6

The requirements of 10 CFR 72.106 require the dose to any individual located on or beyond the nearest controlled area boundary to be 5,000 mrem to the whole body or any organ. While this is a beyond-design basis accident, it is being used to establish a conservative location of the controlled area boundary. Based on the analysis, the controlled area boundary has been established at 325 meters.

6.2.3 Nonradiological Impacts

6.2.3.1 Land Use and Terrestrial Resources

Operation of the Trojan ISFSI will not require the use of any land beyond that which was cleared and graded during its construction. The terrestrial environment is not expected to be adversely impacted due to the operations of the Trojan ISFSI. Operation of the Trojan ISFSI will occur entirely within the boundaries of the existing developed area of the Trojan site and will, therefore, not create any additional disturbance of wildlife in the surrounding area.

6.2.3.2 Water Use and Aquatic Resources

The ISFSI will not consume water for its operation. Existing water supplies will provide necessary water for ancillary usage. The Trojan site is served by an existing sewage treatment plant. This plant is rated at 75,000 gallons per day. This volume is more than sufficient to accommodate the proposed ISFSI workforce.

6.2.4 Other Impacts of Operation

6.2.4.1 Climatology

The operation of the Trojan ISFSI will have no adverse impact to the local or regional climate. The amount of heat released to the air in the vicinity of the ISFSI will be relatively small, and much lower than the thermal discharges associated with the operation of the TNP. The Trojan ISFSI will release no water vapor or particulate matter to the air.

6.2.4.2 Noise

Since the storage of irradiated fuel and associated materials at the ISFSI is a passive system, there will be no significant noise generated by the operation of the ISFSI.

6.2.4.3 Socioeconomic

Operation of the ISFSI will require a minimal staff and will not contribute to any socioeconomic impacts in the region.

7.0 SAFEGUARDS FOR SPENT FUEL

The Commission's requirements for the protection of an ISFSI are set forth in 10 CFR Part 72, Subpart H, "Physical Protection," and 10 CFR Part 73, "Physical Protection of Plants and Materials."

The applicant has submitted to the NRC a physical security plan ("Trojan ISFSI Security Plan," PGE-1073), that contains commitments to these requirements. This plan incorporates measures prescribed in 10 CFR 73.50 and assures that:

- Access to the site is controlled and limited to authorized individuals;
- Unauthorized intrusions or activities are detected in a timely manner;
- Unauthorized intrusion or activities are assessed by watchman;
- The capabilities to call for response, as necessary, and assistance from local police units are available;
- Access to the fuel storage modules is limited and controlled;
- All special equipment needed to gain access to storage canisters are secured to prevent misuse; and
- Movement within the fuel storage area is under surveillance by the site security force.

The contingency plan, required by 10 CFR Part 73, Appendix C, is integrated into the plan. The applicant has developed a security personnel training and qualification plan as required by 10 CFR Part 73, Appendix B.

The spent fuel does not leave the owner-controlled area while being transported from the reactor site to the storage site. The movement of the spent fuel from the storage site for final disposal is projected in the future. Transportation plans for that event will be developed when needed.

Theft or diversion of spent power reactor fuel by subnational adversaries with the intent of utilizing the contained special nuclear material (SNM) for nuclear explosives is not considered credible. This is due to: (1) the unattractive form of the contained SNM, that is not readily separable from the radioactive fission products, and (2) the immediate hazard posed by the high radiation levels.

Accordingly, the storage of spent fuel at this ISFSI will not constitute an unreasonable risk to public health and safety from acts of radiological sabotage or diversion of SNM.

8.0 DECOMMISSIONING

Decommissioning of the Trojan ISFSI will primarily consist of transferring the spent nuclear fuel and GTCC waste contained in the sealed storage baskets to a DOE monitored retrievable storage (or similar) facility, or directly to a federal geological repository for permanent storage. The spent nuclear fuel and GTCC waste to be stored in the ISFSI are not eligible for near-surface disposal in accordance with 10 CFR Part 61. In accordance with the 1982 Nuclear Waste Policy Act, DOE is responsible for accepting spent nuclear fuel and related nuclear material. At the time of decommissioning, PGE assumes that DOE will accept the GTCC waste; if not, PGE will investigate and pursue other disposal options.

After the spent nuclear fuel and GTCC waste have been transferred to the DOE for storage or disposal, a contamination and radiation survey will be performed. This will determine if the Trojan ISFSI is contaminated or if ISFSI components have been activated. Any contamination detected will be removed by routine radiation protection practices. Any activated components will be packaged and shipped as radioactive waste for the appropriate disposal method.

Records pertinent to the safe and effective decommissioning of the Trojan ISFSI will be maintained in a specified location until the ISFSI license has been terminated by the Commission. The types of information the licensee is required to keep are specified in 10 CFR Section 72.30(d). Additionally, records of the cost estimate performed for the decommissioning funding or of the amount certified for decommissioning are to be maintained.

9.0 SUMMARY AND CONCLUSION

9.1 SUMMARY OF ENVIRONMENTAL IMPACTS

As discussed in Section 6, no significant construction impacts are anticipated. ISFSI construction activities will affect only a small fraction of the land area of the TNP. With good construction practices, the potentials for fugitive dust, erosion, and noise, typical of the planned construction activities, can be controlled to insignificant levels. The only resources irretrievably committed are the steel, concrete and other construction materials used in the ISFSI pad, storage casks, and any operating equipment.

The primary exposure pathway associated with the ISFSI operation is direct irradiation of site workers and nearby residents. As discussed in Section 6, there will be no radiological liquid or gaseous effluents during normal operation of the Trojan ISFSI. The estimated doses to both occupational workers and members of the public are below regulatory limits.

As discussed in Section 6, no significant non-radiological impacts are expected during the operation of the Trojan ISFSI. The only environmental interface of the ISFSI is with the air surrounding the storage casks; the only discharge of waste to the environment is heated air from the casks' passive heat dissipation system. Climatological effects will be insignificant.

9.2 BASIS FOR FINDING OF NO SIGNIFICANT IMPACT

The environmental impacts of the proposed action have been reviewed in accordance with the requirements set forth in 10 CFR Part 51. Based upon this review, the staff has determined that the storage of spent nuclear fuel and GTCC waste at the Trojan ISFSI will not significantly affect the quality of the human environment. Therefore, an environmental impact statement is not warranted, and pursuant to 10 CFR 51.31, a Finding of No Significant Impact is appropriate.

10.0 REFERENCES

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24. Portland General Electric, "Trojan Nuclear Plant Radiological Environmental Monitoring Report for 1995," PGE-1006-94, April 1995.

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26. Portland General Electric, "Trojan Permanently Defueled Emergency Plan," PGE-1060, March 26, 1996.

11.0 LIST OF AGENCIES AND PREPARERS

Those NRC staff members principally responsible for the preparation of the EA are listed below:

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