

**BEFORE THE ENERGY FACILITY SITING COUNCIL
OF THE STATE OF OREGON**

In the Matter of the Application by)
Northwest Natural Gas Co.)
for Amendment No. 4 to its) ORDER APPROVING
Site Certificate for the Mist Underground) AMENDMENT No. 4
Natural Gas Storage Facility)

I. Introduction and Background

On September 30, 1981, the Energy Facility Siting Council ("Council", or "EFSC") issued an Energy Facility Site Certificate to the Oregon Natural Gas Development Corporation ("ONG") for an underground natural gas storage facility at the Mist site, near Mist, Oregon, in Columbia County. ONG was a wholly owned subsidiary of Northwest Natural Gas Company ("NNG").

The Site Certificate has been amended three times. Amendment #1, issued in October 1987, extended the deadline for construction and made minor modifications to other sections of the Site Certificate. Amendment #2, issued in August 1988, added a monitoring well. Amendment #3 issued in September 1990, allowed NNG to replace some injection/withdrawal wells. In 1990 ONG assigned the site certificate to its parent company, NNG.

NNG submitted this Application to Amend Site Certificate ("Application") on March 20, 1997. NNG requests an amendment to the Site Certificate, allowing expansion of the Site Boundary, development of related and supporting surface facilities associated with new underground storage reservoirs in the Calvin Creek Storage Area, and upgrading of related and supporting surface facilities at NNG's Miller Station. The Council approves this application.

II. Description of the Application for Amendment

A. Description of the Facility

The Mist underground storage facility provides NNG with a means of balancing relatively constant pipeline gas supplies with widely fluctuating market requirements. Gas is injected into storage during off-peak periods and is withdrawn when market demand exceeds available supplies from other sources. Underground reservoir storage requires suitable

underground geological conditions in a specific geographic area. These conditions occur in depleted oil or gas pools. NNG identified the Mist site as one such area in the late 1970's. The site is located in rural Columbia County in parts of sections 2,3,4,10 and 11 of Township 6 North Range 5 West, Willamette Meridian.

The underground natural gas storage operation consists of a natural gas production field, retrofitted to inject gas back into the ground and withdraw it on a cyclical basis. Some gas always remains in the reservoir, to maintain operating pressure. That is known as "cushion gas". The remainder of the reservoir's capacity is used to inject and withdraw gas relatively rapidly, to meet market needs.

In addition to the naturally occurring underground gas pools, the certificated facility includes related and supporting surface facilities. Most of these are located at NNG's Miller Station, which includes compressors, piping, control, dehydration and auxiliary systems. The existing compressor capacity consists of two 1,350 horsepower natural gas fired compressors and two 550 horsepower compressors. Other surface facilities related to the underground gas storage include gathering lines and facilities for NNG maintenance and operations staff.

B. Description of the Amendment

NNG will develop new underground gas storage capacity and expand the existing Miller Station facility so that an additional 45 million cubic feet per day (Mmcf/d) of storage gas can be delivered into the Portland load center on a design day. This expansion would increase the combined total Mist storage peak day delivery capability to 145 Mmcf/d from the current maximum capability of 100 Mmcf/d. The expansion would require the development of a new storage reservoir with high capacity injection/withdrawal wells, the installation of new 16 inch pipelines from Miller Station to the Calvin Creek well locations and the upgrading of processing and compression equipment at Miller Station.

The Calvin Creek Storage area is located two and one-half miles south of the Miller Station. Exhibit 6 of NNG's Application contains a map showing the facility location. NNG has proposed drilling new injection/withdrawal wells in four locations. They might use only two, but the amendment request describes four. NNG also anticipates drilling one or two observation/monitoring wells.

Additions to the gathering system will consist of two parallel 16-inch pipelines from Miller Station to a pipeline transition point in the Calvin Creek Storage Area. At that point, the 16-inch pipelines will join eight inch and six-inch twin gathering lines connecting them to the individual wellheads in the area. The pipeline will be located in a 200 foot wide corridor. Exhibit 7 of NNG's Application shows the location of these pipeline corridors. The parallel pipelines will be installed in the same right-of-way and spaced approximately 10 feet apart. Each pipeline is designed to transport up to 100 Mmcf/d.

The pipeline corridor will travel under approximately three and one-half miles of pasture land, clear cuts and reforested timberlands. It will cross under the Nehalem River and State Highway 202. The anticipated right-of-way involves 5 landowners. The construction right-of-

way requirements will not exceed 80 feet in width. NNG will maintain a permanent right-of-way approximately 40 feet in width in the area above the pipeline for maintenance and safety.

NNG also proposes to upgrade the compressors at Miller Station. NNG will replace the two 550 horsepower compressors with a single natural gas fired, turbine driven centrifugal compressor rated at 5035 BHP. The two remaining 1,350 BHP units will be operated such that the total compression available will not exceed 6,650 BHP (2,850 BHP more than the existing site certificate allowance of 3,800 BHP). The two older compressors proposed for removal have no emission controls. The new compressor will have state of the art emission control. Therefore, NNG projects a net reduction in NOx emissions. Other design modifications to Miller Station include upgrades to the gas dehydration system, station piping, controls and auxiliary systems so that in the future the station can be further upgraded to approximately 300 Mmcf/d if future storage projects prove to be viable.

Throughout this order, we refer collectively to NNG's proposed changes to the existing underground gas storage operation as the "Project."

III. Amendment Process and Procedural History

A. Council Jurisdiction¹

When EFSC approved the Site Certificate for the Mist Site in 1981, its jurisdiction included both the surface and underground components of the facility. In 1993, the siting law was amended to include within the Council's jurisdiction only the

*"surface facility related to an underground gas storage reservoir that, at design injection or withdrawal rates, will receive or deliver more than 50 million cubic feet of natural or synthetic gas per day, and require more than 4,000 horsepower of natural gas compression to operate ***." ORS 469.300(9)(a)(H).*

Underground storage reservoirs, injection, withdrawal and monitoring wells and individual wellhead equipment remain under DOGAMI's pervasive authority over the wells and other subsurface components. ORS 469.300(0)(a)(H)(i)-(ii); see 1993 Or Laws, ch 544, § 3.

The surface facilities at the Mist site are subject to Council jurisdiction because they have the capacity to receive or deliver more than 50 million cubic feet per day.

Standing alone, the Project would not be an "energy facility" subject to EFSC jurisdiction because the new underground gas storage reservoir will have the capacity to receive or deliver only 45 million cubic feet of natural gas per day and will require a maximum of 2,150 horsepower of compression to operate. An additional 1,800 horsepower increment is needed to achieve the current permitted rate of 100 Mmcf/d from the Bruer and Flora storage reservoirs that are currently in operation at the Mist Site. When the Project is complete, the compression requirements for the Bruer and Flora reservoirs will increase because the higher throughput rates for the South Mist Feeder will create more back pressure at Miller station. More horsepower will

¹ Jurisdictional issues raised by Local 290, United Association of Plumbers and Pipefitters, are addressed in Section V. of this Order.

be required to achieve the same 100 Mmcf/d flow rate from the Bruer and Flora reservoirs.

The new compressor will be rated at 5035 BHP. The Site Certificate will be conditioned to require that the remaining two 1,350 BHP units be operated so as to achieve a maximum compression BHP of 6650, which is 2,850 BHP more than the existing site certificate allowance of 3,800 BHP.

The pipelines would not be subject to EFSC jurisdiction either, because their aggregate length is approximately three and one half miles, less than the five-mile minimum length for jurisdictional pipelines. ORS 469.300(9)(a)(E)(ii). The Council's jurisdiction over the Project is therefore based on the Project's expansion of an existing jurisdictional facility. ORS 469.320(1); OAR 345-21-000(1).

B. Amendment Process²

The council's amendment rules, OAR Chapter 345, Division 27 do not apply to this request for amendment. OAR 345-01-030. Instead, the site certificate authorizes two specific processes for council decision-making on amendments, depending on the nature of the amendment. One process (Section VII.A - E) applies "if future unforeseen developments cause the construction or operation of the underground storage reservoir or related and supporting facilities to present a danger to public health, safety or welfare, or if Federal law requires a change." There is no Federal law change related to this application, and there have been no unforeseen developments at the Mist site creating any danger to public health, safety or welfare.

The second process, at Section VII.F of the site certificate, provides:

"For amendments not affecting the public health, safety or welfare and where ONG and EFSC agree that it is desirable to amend this site certificate ONG may file with the EFSC an application for an amendment to the site certificate agreement, which application shall state the necessary reasons therefore. The EFSC may grant such application without further proceedings at its regular public meeting."

Although we believe the second process is the legally applicable process, it does not specifically provide for public comment or agency review. Therefore, NNG agreed to follow a more extensive and inclusive process than that authorized by the site certificate. In fact, the process followed for this amendment includes as much or more opportunity for public participation, notice and comment than the process specified in the site certificate for "unforeseen" dangers.

Had the amendment been processed under the alternative process set forth in the site certificate for unforeseen dangers, the amendment would have been (1) distributed to state agencies and local governments, with opportunity for comment; (2) upon request of 10 or more members of the public, if NNG and EFSC did not agree on the amendment, presented at a public hearing; and (3) brought to the Council for decision. The process actually followed was more

² Local 290, United Association of Plumbers and Pipefitters, commented on May 1, 1997 on the adequacy of the review process. The comments of Local 290 are addressed in Section V of this Order

extensive and provided for more public input.

The actual process followed included:

1. An informational public comment hearing in the local community, at which local residents could learn about the project and have opportunity for questions and comments. The hearing was noticed in local media and to local landowners; more than 80 persons attended.
2. Separate hearings in Columbia County for local land use approvals for the pipeline and the compressor station modifications.
3. Formal notice from OOE that the application was submitted, followed by opportunity for public comment, to the council's mailing list, to other state agencies and affected local governments, and to property owners located within 500 feet of the proposed site boundary.
4. A site tour of the project for the Council, open to the public.
5. A "first reading" before the Council at a regular Council meeting on May 30, 1997, which included opportunity for public comment.
6. Following the close of public comment, the Council issued a proposed order recommending approval of the Project, which was also the subject of public notice to persons described above, with opportunity for public comment.
7. A "second reading" on July 21, 1997, at a regularly scheduled Council meeting.

C. Applicable Standards

The council's rules are silent concerning the standards that apply to the amendment of this site certificate. For the reasons that follow, we believe that we must determine whether the Project complies with our own standards and applicable statutes of other agencies before we may authorize an amendment to the site certificate.

"One-stop" permitting is the cornerstone of energy facility siting in Oregon. See Letter of Advice dated November 4, 1991 to David Stewart-Smith, Acting Administrator, Nuclear Safety/Energy Facilities, Department of Energy (OP-6428). The distinguishing features of one-stop permitting for energy facilities are centralized decision-making, and the preemptive effect of that decision on other agencies and units of local government. Under ORS 469.503(1)(b), with exceptions not relevant here³, the council makes the decision on compliance with all other Oregon statutes and administrative rules applicable to the issuance of a site certificate for the proposed facility. That decision, once made, binds other state agencies and political subdivisions "as to the approval of the site and the construction and operation of the proposed facility." ORS 469.401(3).

The question is whether the legislature intended to treat an amended site certificate differently from an original site certificate with respect to its issuance and effect. We believe it

³The council does not make the decision on compliance for "statutes and rules for which the decision on compliance has been delegated by the Federal Government to a state agency other than the council. . ." None of the permits at issue here are federally delegated.

did not. An amended site certificate is no less a site certificate than is the original document. ORS 469.401 speaks of a "site certificate" with no qualification, such as "original" or "amended." An amended site certificate has the same preemptive effect vis a vis other state agencies and political subdivisions as the initially executed site certificate. It follows that we must make the same determination on compliance for an amendment to a site certificate that we must make for initial issuance of a site certificate. We must determine whether the facility -- or the amended facility -- complies with the standards, statutes and rules applicable to the siting decision. That includes statutes and rules governing the decisions on other agency permits. We must then impose conditions in the amended site certificate to ensure compliance with the applicable standards, statutes and rules.

D. Procedural History

NNG submitted its Application on March 20, 1997.

Public Notice

On March 21, 1997, the Oregon Office of Energy (OOE) sent written notice of the application to all members of the EFSC general mailing list, and to all property owners meeting the criteria of OAR 345-20-011(1)(c).

The notice of application stated that the Application was available for public review at three locations: the Mist General Store, the St. Helens Public Library, and the OOE office in Salem. The notice also stated that copies would be sent to individuals upon request by contacting OOE.

The notices stated that comments from the public were invited. A deadline of May 1, 1997 was set for comment. On May 1, 1997, OOE received two sets of comments. Linda Williams submitted comments on behalf of Local 290, United Association of Plumbers and Pipefitters, its Business Manager Matt Walters, and interested members (collectively "Local 290"). Local 290 also submitted comments by John Williams. Those comments are addressed separately in Section V at pages 36 through 43 of this order.

After further review of supplemental information provided by NNG, Local 290 stated in a letter dated May 29, 1997 that their concerns were satisfied and that they withdrew their objections. No other comments were received.

Notice to State Agencies and Affected Local Governments

On March 21, 1997 OOE sent copies of the Application to the agencies and local governments listed in OAR 345-20-040(1). OOE requested comments from agencies and affected local governments by May 1, 1997.

Public Meeting Held by NNG

On April 23, 1997, NNG held an information meeting at the Natal Grange, near Mist, Oregon. Members of NNG explained the project and answered questions. OOE attended the meeting but did not participate. This meeting was not held pursuant to any EFSC or OOE rule, and public notification of this meeting was performed by NNG, not by OOE. Approximately 70

persons (excluding NNG staff) attended, including two County Commissioners.

Public Meeting Held by EFSC

On May 30, 1997, the Council reviewed the Application and the Department's draft proposed order at a public meeting at the Columbia Center in St. Helens, OR.

Proposed Order and Public Comment Period

On June 6, 1997, a Proposed Order approving the amendment was issued. Notice of the Proposed Order was distributed to all persons on the Council's general mailing list, state agencies and affected local governments as listed in OAR 345-20-040(1), and all property owners meeting the criteria of OAR 345-20-011(1)(c). The notice stated that comments on the proposed order must be submitted by the close of business on July 7, 1997. No comments were received.

IV. Findings and Conclusions

A. Compliance with EFSC Standards in OAR 345 Division 22

1. OAR 345-22-010 Organizational, Managerial and Technical Expertise

Under Part (1) of this standard the Council must determine whether the applicant has the organizational, managerial and technical expertise to construct and operate the facility. To conclude that the applicant has the organizational, managerial and technical expertise to construct and operate the proposed facility, the Council must determine that the applicant has "a reasonable probability of successful construction and operation of the facility considering the experience of the applicant, the availability of technical expertise to the applicant, and, if the applicant has constructed or operated other facilities, the past performance of the applicant, including but not limited to the number and severity of regulatory citations, in constructing or operating a facility, type of equipment, or process similar to the proposed facility."

Part (2) of this standard states that "if the applicant will not itself obtain any state or local government permit or approval for which the Council would ordinarily determine compliance with applicable standards, but will rely on a permit or approval issued to a third party, the Council must determine that the named third party has, or has a reasonable likelihood of obtaining, the necessary permit or approval, and that the applicant has, or has a reasonable likelihood of entering into, a contractual or other arrangement with the third party for access to the resource or service secured by that permit or approval."

Discussion: NNG is a 140 year old company whose core business is the local distribution of natural gas. NNG or its wholly owned subsidiary ONG have operated the Mist underground storage facility since 1988. The requested amendment would not allow NNG to construct a different type of facility from the one they are now operating, but would allow the same type of operations within expanded boundaries. The company personnel who have been managing the existing storage facility will continue to operate the expanded facility. Many of the individuals now working for NNG who are involved in the design and construction of the expanded facilities

have been with the underground storage project at Mist since its inception.

The Application provides names and qualifications for key personnel responsible for the development of the proposed expansion. These include several individuals with prior experience with the Mist facility and NNG's South Mist Feeder, including the Project Manager, the Pipeline Design and Installation Engineer, and the Mist Storage supervisor.

The record reveals no regulatory citations. NNG states that it has received no violations for occupational safety nor any regulatory citations from DOGAMI in connection with its underground storage. A May 1996 inspection by Oregon Public Utilities Commission ("OPUC"), indicated no violations⁴.

NNG has identified, and we are aware of, no third party permits. The proposed expansion would require a limited water right from Water Resources Department, and Water Pollution Control Facilities Permit from Department of Environmental Quality, and a Removal/Fill permit from State Lands. NNG has applied for these permits directly. Therefore section (2) and (3) of this standard do not apply.

Conclusion: NNG's prior experience constructing and operating the Mist Storage Facility, and the fact that the proposed expansion would involve identical activities, provide reasonable assurance that NNG can successfully construct, operate and retire the facility.

2. OAR 345-22-020 Structural Standard

This standard requires that:

"(1) The applicant, through appropriate site-specific study, has adequately characterized the site in terms of seismic zone and expected ground response during the maximum credible and reasonably probable seismic events; and

(2) The facility can be designed, engineered, and constructed adequately to avoid potential dangers to human safety presented by seismic hazards affecting the site, as defined in ORS 455.447(1)(d) and including amplification, that are expected to result from all reasonably probable seismic events."

Discussion: The standard has two components, a site characterization requirement and a design and construction requirement. NNG retained a consultant, Dames & Moore, to prepare a geotechnical investigation of the site. The application summarizes Dames & Moore's report and provides the entire report as Exhibits 10 and 11 in the Application.

Site Characterization Exhibit 10 provides a general description of the geology of the Mist Field area, describing the formation of the coast range and providing a detailed description of the layers of compressed volcanic ash, basalt, sandstone, mudstone, more recent basalt deposits, and most recently clay and silt soils which make up the Coast Range in the Mist area. The

⁴ Concerns of Local 290, United Association of Plumbers and Pipefitters, regarding the applicant's regulatory history are addressed in Section V of this Order.

underlying sandstone layer known as the Clark and Wilson Sandstone contains numerous faults and structures which have trapped natural gas, and it is this sandstone layer which contains the producing gas reservoirs and storage reservoirs in the Mist Field. The stability of these reservoirs is confirmed by the fact that, despite millions of years of uplift, the gas has not escaped. Above the Clark and Wilson Sandstone Layer are more recent layers of mudstone and siltstone up to 1600 feet thick. These are known as the Keasey Formation and are composed mainly of volcanic ash. Above the Keasey Formation are additional layers of sandstones and mudstones, which are capped by the relatively thin layers of the same Columbia River Basalt group that is well exposed in the Columbia River Gorge, which erupted between 15 and 5 million years ago. Above the basalt are more recent clay and silt soils, reaching a depth in excess of 50 feet at Miller Station.

The Oregon Building Code, 1993 Edition, designates the site as Seismic Zone 3. The code provides design criteria for structures in this zone based on the ground acceleration and likely amplification or shaking that may occur during an earthquake. NNG and its consultant considered three general sources of earthquakes in the area.

"Interplate" earthquakes are centered off the Oregon coast, where the Pacific Ocean floor and North American "plates" of the earth's crust grind together. For design evaluation, NNG considered the maximum credible earthquake to be a magnitude 8.5 event originating 15 miles beneath the earth's surface at a distance of 45 miles from the project site.

NNG also considered an "intraplate" event, occurring as the descending slab of the Pacific Ocean floor begins to break within the earth's upper mantle, releasing stresses within the slab. NNG considered the maximum credible event from this source to be a quake of magnitude 7 originating thirty miles beneath the earth's surface at a distance of 6 miles from the Site.

Finally, NNG considered quakes from random crustal events, based on the seismic history of the area (given in Application Exhibit 10, Table G-2). NNG considered the maximum credible event from this source to be a magnitude 6 event originating 6 miles beneath the surface at a distance of 6 miles from the Site.

Dames & Moore performed a site specific investigation of ground response from these postulated events, based on boring and cone penetration tests. Ground response was computed using the SHAKE91 program, which predicts amplification of ground motions taking into account local ground conditions. The results were provided in Exhibit 11 of the Application. All calculated effects were less than the seismic loadings for Uniform Building Code Seismic Zone 3. Dames & Moore used the maximum credible seismic event rather than the lesser "reasonably probable" event, and the resultant ground accelerations were within design criteria for the proposed facilities.

From the foregoing, we conclude that NNG has adequately characterized the site in terms of seismic zone and ground response during the maximum credible event, based on appropriate site specific study.

Seismic Hazards: In its report to NNG, Dames & Moore analyzed the hazard from ground shaking, site amplification, mass movement, differential soil compaction and settlement,

liquefaction, lateral spread and surface fault rupture.

For seismic hazard due to ground shaking and amplification, the facilities at Miller Station can be safely designed using conventional UBC methods. For the pipeline, Dames & Moore cited a study of Southern California Gas Company's transmission and distribution system which found no reported cases of damage to a steel pipeline with arc-welded joint (post World War II construction techniques) due to ground shaking. The planned pipeline and wells are not vulnerable to seismic ground shaking.

Mass movement was considered in planning the pipeline route. The pipeline route was revised to avoid unstable ground which could be affected by landslides. The revised pipeline alignment has a very low risk of seismic mass movement.

Dames & Moore considered hazards due to differential soil compaction and settlement. They concluded that the risk of seismic settlement is very low.

Liquefaction was found not to be a significant concern at Miller Station based on the highly cohesive soils at the site. Dames & Moore noted that alluvial soil layer which is subject to liquefaction is 10 feet thick along the pipeline route. Studies of buried pipe performance during previous earthquakes have been based on layers of liquefiable soil significantly greater than 10 feet site. Dames & Moore concluded that risk to the pipeline due to liquefaction is low because of the limited liquefiable layer, the small potential spread magnitude, and the high strength of the pipeline material. Dames & Moore also concluded that the risk of surface fault rupture was low based on a study of existing faults and recent seismic history.

In Exhibit 11 of the Application Dames & Moore provides extensive recommendations to minimize hazards. NNG has revised its pipeline route to avoid areas of significant landslide potential, in accordance with these recommendations.

Conclusion: The Council reviewed the Application and Exhibits in consultation with DOGAMI. In commenting on the Application's technical adequacy, DOGAMI wrote:

" The Dames and Moore Consulting Co. geological and geotechnical reports included in the application cover in detail the geological and geotechnical conditions associated with the site including stratigraphy, structural geology and soil conditions. The seismicity sections consider subduction, intraplate and crustal earthquake potential including historical earthquake activity. The locations of known faults are included in the site area study as is ground response and amplification and liquefaction potential. A SHAKE analysis is included and the report concludes that expansion of the underground storage project will accommodate the UBC seismic standards."

In conclusion, the Northwest Natural Gas request for amendment to the EFSC Site Certificate for Underground Natural Gas Storage, Mist, Oregon has been reviewed and found to be complete regarding geological and seismic hazards. The reports contained in the application represent a high degree of rigor by the applicant to consider these hazards and DOGAMI would like to compliment Northwest Natural Gas for the high quality of work this represents."

Our finding of compliance with this rule is based largely on the selection of pipeline route as recommended by Dames & Moore, and on the other recommendations for construction. We therefore add a condition that the pipeline corridor be as described in Exhibits 10 and 11, and that any significant change in pipeline corridor receive prior EFSC concurrence. A Site Certificate condition will require that NNG implement recommendations in Exhibit 11 for Miller Station and the pipeline installation. With these conditions, we conclude that the Project meets both the site characterization and seismic hazard portions of this rule.

3. 345-22-022 Soil Protection

Under this standard the Council determines whether the construction and operation of the facility, taking into account mitigation, is likely to result in a significant impact to soils.

Discussion The Application includes a soils investigation and report (Application, Exhibit 12) provided by NNG's consultant, Dames & Moore. The Exhibit identifies ten soil types that will be subject to project construction activities. The soil types are characterized in terms of soil depth, permeability, water capacity, effective rooting depth, runoff, and water erosion hazard.

The Exhibit identifies soils with high water erosion hazard at Miller Station and along portions of the pipeline alignment, gathering line alignment and at certain wellhead locations. The Exhibit also identifies vegetation types along the pipeline route, including second growth conifer forest, young conifer forest, mixed conifer and deciduous forest, wetlands and farmed hay and pasture.

The Application considers the project's likely impact on soils at Miller Station, the pipeline alignment, and the wellhead sites.

Impacts at Miller station will not be significant because the station is already an industrial site, and the planned equipment locations are already covered by crushed rock. NNG has committed to adding additional crushed rock where there will be heavy traffic. Dames & Moore has provided detailed recommendations for the earthwork associated with Miller Station improvements, (Exhibit 11, Section 7) including recommendations for excavation, fill placement and compaction, fill suitability, slope inclinations, subgrade preparation and protection, and dewatering. Dames & Moore provided additional recommendations concerning foundation support, lateral earth pressures, mat foundations, seismic design parameters, and dynamic load considerations. These recommendations will prevent significant adverse impact on soils at Miller Station.

Impacts along the pipeline route would be from construction. NNG states that after pipeline burial, plant growth will be established to prevent erosion. NNG has committed to using native soils for backfill once the pipeline is surrounded by bedding sand. Sloping areas along the pipeline route are primarily covered by second growth and young conifer forest and mixed forest, which are already heavily impacted by timber use. The pipeline alignment has been changed following investigation of the slopes in the area, to avoid slopes already affected by landsliding. Therefore, the pipeline will not exacerbate existing slope instability. NNG has committed to

providing drainage barriers at the base of all sloping sections of the alignment. During construction NNG will segregate organic topsoil for special handling, place crushed rock on access roads, and revegetate all slopes as quickly as possible to prevent erosion.

Construction impacts in wetlands and pasture would be temporary. In the wetland area north of highway 202, the pipeline route follows the route of an existing pipeline which was installed 10 years ago. OOE, ODFW and DSL inspected that route and observed that the vegetation along that route has recovered and there is no evidence of prior disturbance.

NNG's consultant, Dames & Moore, provided detailed recommendations for pipeline construction in Exhibit 11, Section 8. These include recommendations for groundwater checking prior to construction, subgrade stabilization, backfill and bedding drainage. Dames & Moore also made specific recommendations regarding the highway 202 crossing.

At the Nehalem river crossing, NNG has committed to directional drilling, which is designed to ensure that the pipeline will be 20 feet below the river bed, in bedrock. Therefore, there will be no impact on soils at the river crossing.

Conclusion: The NNG commitments identified above, and the construction recommendation of Dames & Moore, (Application Exhibit 11 Sections 7 and 8) shall be added as conditions to the Site Certificate. Based on the mitigation proposed and on the impact from existing agricultural and timber harvesting activities, we conclude that the Project is not likely to result in significant impacts to soils.

4. 345-22-030 Land Use

Under this standard, the Council must determine whether the facility complies with the statewide planning goals adopted by the Land Conservation and Development Commission. A proposed facility shall be found in compliance with of this rule if the facility has received local land use approval under the acknowledged comprehensive plan and land use regulations of the affected local government.

Discussion: NNG has elected to meet the Council's Land Use standard by obtaining local land use approval under the acknowledged comprehensive plan and land use regulations of the affected local government.

The Mist facility and proposed expansion are located in Columbia County. LCDC acknowledged the Columbia County Comprehensive Plan and Columbia County Zoning Ordinance on July 25, 1985.

The Columbia County Commission issued notice approving a conditional use permit for the Miller Station improvements on February 12, 1997, and notice approving a conditional use permit for the underground storage reservoir, wells and pipelines on March 17, 1997. NNG has provided the notices of approval by the County as Exhibits 15 and 16 (for the Miller Station improvements) and Exhibit 19 and 20 (for the underground storage reservoirs, wells and pipelines.) The conditional use permits are attached to this order as Exhibits A and B.

Conclusion: We conclude that NNG has received local land use approval from Columbia County under its acknowledged Comprehensive Land Use Plan and Zoning Ordinance. Therefore, the proposed expansion meets the Council's Land Use Standard.

5. 345-22-040 Protected Areas

This standard prohibits the siting of an energy facility in any of the protected areas listed in OAR 345-22-040(1). The council must determine whether, taking into account mitigation, the design, construction and operation of a facility located outside the areas listed below is likely to result in significant adverse impact to any of the listed protected areas.

Discussion The Mist facility and proposed expansion are not located in a listed protected area.

For purposes of this application NNG considered protected areas within a range of 20 miles generally, and farther to the north and west along the Nehalem and Columbia rivers.

Among protected areas within the range of study, the application lists a state estuarine sanctuary 15 miles from the site, along the Columbia River. However, the Mist site is on the opposite side of the Coast Range from the Columbia River, and the watershed for the Mist site does not flow into the Columbia. Therefore, no protected area along the Columbia River would be at all affected by the Mist facility or the proposed expansion.

The nearest listed protected area is the Jewell Wildlife Refuge, located along Highway 202. The Council considered potential impacts to that refuge in its 1981 Final Order Approving the Mist Natural Underground Storage Facility and found none. The facility's most visible feature, the Miller Station, is not visible from the Jewell refuge, and the proposed improvements in compressor and other facilities would not increase the visibility of Miller Station. NOX emissions are expected to decrease with a newer compressor, so that the Miller Station improvements would not adversely affect air quality at the wildlife refuge. NNG has committed to directional drilling which will place the gas pipeline well below the Nehalem River bed. Therefore the proposed expansion will not result in adverse water quality impacts at the wildlife refuge. Further, the Project will not affect the elk population because it will not significantly impact high value habitat, in accordance with the Council's Fish and Wildlife Habitat Standard. OOE reviewed the findings of no adverse impact on the Jewell Wildlife Refuge in the 1981 Final Order and found that conditions today justify the same findings.

Conclusion The Project has minimal impacts even on its closest neighbors and is too far from the closest protected areas to affect them. We conclude that the Project is not likely to have an adverse impact on any protected areas listed in this standard. No new conditions are required.

6. 345-22-050 Financial Assurance

To issue a Site Certificate, the Council must find that the applicant has a reasonable likelihood of obtaining a bond or comparable security, satisfactory to the Council, in an amount adequate to restore the site if the certificate holder:

- (1) Begins but does not complete construction of the facility; or
- (2) Permanently closes the facility before establishing a financial mechanism or instrument, satisfactory to the Council, that will assure funds will be available to adequately retire the facility and restore the site to a useful, non-hazardous condition.

Discussion: This standard was not in effect when EFSC granted the original Site Certificate. In reviewing this amendment request we consider the effect the proposed expansion would have on NNG's ability to procure funds for site restoration.

NNG estimates that the restoration cost attributable to the Project will be approximately \$100,000 in 1996 dollars. We concur in that estimate.

NNG provided Annual Financial Reports for 1996, 1995 and 1994. NNG showed total operating revenues of \$370 million in 1996, \$348 million in 1995 and \$356 million in 1994, with net operating revenue of \$237 million in 1996, \$212 million in 1995 and \$205 million in 1994. The financial report for 1995 also shows that at year end 1996, NNG assets included \$8.22 million in cash and cash equivalents. The Annual Report for 1995 also shows that NNG has paid dividends each year for 40 years, providing additional assurance of the NNG's financial stability.

These reports show that NNG would be able to secure a bond or comparable security to secure restoration costs of \$100,000.

Conclusion We conclude that NNG is reasonably likely to be able to secure a bond or comparable security to secure the cost of restoring the site.

7. 345-22-060 Fish and Wildlife Habitat

To issue a Site Certificate, the Council must find that the design, construction, operation and retirement of the facility, taking into account mitigation, is consistent with the fish and wildlife habitat mitigation goals and standards of OAR 635-415-030.

Discussion OAR 635-415-030 describes four categories of habitat in order of their value. The rule then establishes mitigation goals and corresponding implementation standards for each habitat category.

Habitat Category 1 is habitat of exceptional value. No areas of Category 1 Habitat would be affected by the proposed amendment.

Habitat Category 2 is high-value habitat. NNG has identified the Nehalem River and one wetland north of highway 202 as category 2. The implementation standard is avoidance or mitigation in-kind and on-site.

Habitat Category 3 is also high value habitat. The implementation standard is avoidance or mitigation either in-kind or out-of-kind and either on-site or off-site. NNG identified no category 3 habitat in the project area.

Habitat Category 4 is low value habitat. The goal is to "minimize the loss" of habitat value or, if possible, conserve or enhance habitat. The implementation standard provides for flexible

mitigation. NNG has identified areas along the pipeline route and proposed wellhead sites now used for timber and agricultural activities as category 4.

NNG retained consultant Dames & Moore to conduct a biological resource investigation and evaluation of the proposed project area. The study is included as Exhibit 21 of the Application. As part of the study, a biologist walked the length of the pipeline route and well sites to identify all habitat, wetlands and streams that would be affected by the project. A 200 foot wide corridor was evaluated to accommodate potential route adjustments.

Dames & Moore identified five wetland areas along the pipeline corridor. All have been severely affected by human activity. In all Dames & Moore defined seven types of habitat along the pipeline route and at proposed well sites, as follows:

- (a) Second growth conifer forest
- (b) Second growth mixed conifer/deciduous forest
- (c) Regenerated clear cuts.
- (d) Farmed hay and pasture
- (e) Nehalem River
- (f) Small tributaries
- (g) Wetlands

The Nehalem River is Category 2 (high value) based on its value to the coho salmon and steelhead. These species are not listed as endangered or threatened, but are subject to a State recovery plan. The Nehalem will not be affected by the Project because NNG will cross the river by directional drilling, which will begin at points 300 feet from either side of the river and will be at least 20 feet below the bottom of the river. This approach will avoid impact to the river, and therefore this meets the implementation standard for either category 1 or category 2.

One wetland, north of highway 202, is also category 2 habitat. This wetland is currently crossed by a gas pipeline at the proposed crossing location for the proposed pipeline. The existing pipeline was installed about 10 years ago. The vegetative cover has completely recovered and there is no sign of earlier disturbance.

The portions of the pipeline route that go through forest and clear cuts are Category 4 (low value) because they are on private timber land used for tree farming. The habitat value of these lands has been severely affected by timber harvest activities. Future timber harvesting will continue to affect habitat value. The wetlands other than the Category 2 wetland north of Highway 202 are also low value because they are severely disturbed by timber harvesting activities or by pasture and grazing.

The farmed hay and pasture lands are of low value due to little habitat diversity. The pipeline will also cross a small, unnamed tributary of the Nehalem River. These are low value because they are degraded by livestock and other agricultural activities.

NNG has proposed mitigation consistent with the ODFW implementation goals. Impacts to the

Nehalem River will be avoided by directional drilling, which will not disturb the river or river bed.

Impacts to the single Category 2 wetland north of Highway 202 will be minimized. NNG will use a single trench for the dual pipelines, keeping the installation trench as narrow as possible while remaining consistent with safety and practical installation requirements, timing construction to occur at the driest time of year, separating and returning topsoil to the trench back-fill surface, avoiding changes to the hydrology of the wetland by installing clay barriers at each end of the wetland crossing, and avoiding the rest of the wetland during construction by use of an existing road through the wetland for construction equipment.

Upon completion of construction NNG will restore the habitat to its preconstruction conditions within one or two growing seasons. There will be no net loss of either habitat units or habitat value. Mitigation will be on-site and in-kind through complete restoration of the habitat.

NNG will minimize the loss of Category 4 habitat in forested areas and clear cuts by encouraging vegetation to grow back in the construction corridor except for the 40 foot area directly over the pipeline, which must be kept free of trees for visual inspections. In farmed areas, the surface will be restored following pipeline construction and the land will continue to be farmed. There will be no loss of habitat value and no need for mitigation.

NNG has committed to crossing the small unnamed Nehalem and Calvin Creek tributaries by timing the crossing during the dry period and by restoring the stream bed and stream banks before the rainy season. There will be little or no loss of habitat value and no need for further mitigation.

NNG will minimize the impact to Category 4 wetlands by separating the upper foot of topsoil from the rest of the trench spoils and replacing it on the top of the trench, and minimizing the time equipment is in the wetlands. NNG will filter any water pumped from the trench during construction to remove sediments before it is returned to the wetland. There will be little or no loss of habitat value and no need for further mitigation.

Big Game Habitat: The Project site is within a major big game habitat area. The area is used for hunting elk, deer, pheasant, grouse and bear.

Changes to Miller Station will all be within the current, fenced Miller Station site. The remainder of the Project will be underground. Out of a total Project area of approximately 1,300 acres, only 15 acres will be permanently cleared for the Project. The vast majority of those 15 acres is low-value (Category 4) habitat.

The area that will be permanently affected by the Project is a minute fraction of the big game habitat in the area and is in no way unique. Big game habitat loss will therefore be minimal.

Inspection by State Agencies : On April 23, 1997 representatives from OOE, ODFW, the U.S.Army Corps of Engineers and DSL inspected the wetlands. The two OOE representatives also walked down the entire length of the proposed pipeline route and wellhead sites.

The DSL Natural Resource Coordinator concurred with NNG's assessment of the impact on wetland and with their proposed mitigation steps. In particular, DSL concurred with NNG's

assessment that the impact on wetlands classified as Category 4 would not add significantly to the disturbance from ongoing timber and agricultural activities. DSL concurred with NNG's assessment that the lone Category 2 wetland has recovered from the pipeline installation of 10 years ago, and that the mitigation steps proposed by NNG should ensure restoration. DSL recommends construction activities be timed for the dry part of the year, as planned by NNG.

The ODFW District Wildlife Biologist concurred with NNG's classification of habitat categories. ODFW concurred with NNG's assessment that the areas classified as category 4 are severely disturbed by timber and agricultural activities and that the impacts from the proposed project would not add significantly to existing impacts.

Both DSL and ODFW found the mitigation steps proposed by NNG appropriate and did not recommend that further mitigation requirements be imposed.

Conclusion NNG has appropriately characterized the fish and wildlife habitat and has proposed mitigation consistent with the ODFW goals set forth in OAR 635-415. Representatives from OOE, ODFW and DSL have walked down the site and concur with NNG's categorization and mitigation plans. All participating State agencies concurred that the impacts to fish and wildlife habitat from the Project would not add significantly to existing impacts from timber and agricultural uses.

NNG has committed to directional drilling across the Nehalem River to begin at points 300 feet from the river and designed so that the pipelines will be at least 20 feet below the river bed. In Section V.G.4(b) of the Application NNG has identified six mitigation steps at the lone Category 2 wetland north of Highway 202. NNG has committed that the habitat will be completely restored to its preconstruction condition within one or two growing seasons. NNG has indicated that vegetation will be encouraged to grow back in the construction corridor in forested and clear cut areas. In category 4 wetlands, NNG will separate the upper foot of topsoil from the rest of the trench spoils and replace it on the top of the trench. NNG will minimize the time equipment is in the wetlands and will filter any water pumped from the trench before returning it to the wetland. These commitments will be added as conditions to the amended Site Certificate.

Because of comments from ODFW and DSL regarding the importance of timing construction activities to the dry season, the Council adds a condition requiring NNG to undertake construction of the gathering line during the dry season, not to extend beyond November 15, 1997.

Based on the foregoing, and taking into account mitigation, we conclude that the Project is consistent with the fish and wildlife habitat mitigation goals and standards of OAR 635-415-030.

8. 345-22-070 Threatened and Endangered Species

To issue a Site Certificate, the Council, after consultation with appropriate state agencies, must find that:

- (1) The design, construction, operation and retirement of the proposed facility, taking into account mitigation, is consistent with any applicable conservation program adopted pursuant to

ORS 496.172(3) or ORS 564.105(3); or

(2) If no conservation program applies, the design, construction, operation and retirement of the facility, taking mitigation into account, does not have the potential to significantly reduce the likelihood of the survival or recovery of any threatened or endangered species listed under ORS 496.172(2) or ORS 564.105(2).

Discussion No conservation program adopted under ORS 496.172(3) or ORS 564.105(3) applies to the study area.

NNG consulted the U.S. Fish and Wildlife Service, the National Marine Fisheries Service and the Oregon Natural Heritage Program to obtain information concerning threatened and endangered species and habitats. NNG's consultant Dames & Moore conducted field studies to look for evidence of use by any of the relevant species. The studies and results are described in the Application Exhibit 21.

Dames & Moore identified and studied 5 listed species of birds. No evidence was found that any of the 5 species would be affected by the project. Dames & Moore also identified two species proposed for listing, the coho salmon and steelhead. However, habitat for these species will not be affected because NNG's pipelines will cross the Nehalem River by directional drilling.

Conclusion: The Project does not have the potential to reduce the likelihood of the survival or recovery of any of the listed species. No additional conditions are required.

9. 345-22-080 Scenic and Aesthetic Values

To issue a Site Certificate, the Council must find that the design, construction, operation and retirement of the facility, taking into account mitigation, is not likely to result in significant adverse impact to scenic and aesthetic values identified as significant or important in applicable federal land management plans or in the local land use plan for the site or its vicinity.

Discussion: Miller Station is visible only from a few isolated points along highways 47 and 202, and from privately owned lands nearby. Miller Station can also be seen from points in the hills across the Nehalem River to the south. These points are in private lands dedicated to timber production.

There is no federally owned surface land in the vicinity of the Site and no applicable federal land management plan. No scenic resources identified in the Comprehensive Land Use Plan for Columbia County are within 5 miles of the Site. No scenic resources identified in the Clatsop County Comprehensive Land Use Plan are within 10 miles of the Site. The Nehalem River in the vicinity of the proposed expansion has not been designated a scenic waterway by state, federal or local governments.

The proposed expansion would not affect any of these scenic resources. Pipelines will be buried and vegetation along the pipeline route restored to the extent practical.

Improvements at Miller Station will not affect any scenic resource because the proposed new structures will look very similar to the currently existing ones. The view of Miller Station from

the highway and from points overlooking the Nehalem currently includes primarily timberlands and clear cuts.

Sections of Highway 47 are designated as scenic highway. OOE inspectors have made numerous trips to the vicinity and have observed that the facility has no impact on the view from this highway. From public highways, the pipeline would not be visible at all. A knowledgeable observer can identify Miller Station from selected points along highway 47, but only with some effort. Casual observers would not see it. The facility currently has no identified impact on scenic resources identified in applicable land management plans, the and proposed expansion will not noticeably change the existing view.

Conclusion: The Project is not likely to result in significant adverse impact to scenic and aesthetic values protected by the rule. No new conditions are required.

10. 345-22-090 Historic, Cultural and Archaeological Resources

To issue a Site Certificate, the Council must find that the construction, operation and retirement of the facility, taking into account mitigation, is not likely to result in significant adverse impacts to:

- (1) Historic, cultural or archaeological resources that have been listed on, or would likely be listed on the National Register of Historic Places;
- (2) For a facility on private land, archaeological objects, as defined in ORS 358.905(1)(a), or archaeological sites, as defined in ORS 358.905(1)(c); and
- (3) For a facility on public land, archaeological sites, as defined in ORS 358.905(1)(c).

Discussion NNG conducted a record search at the State Historic Preservation Office ("SHPO"). The search released no resources currently listed on, or likely to be listed on, the National Register of Historic Places. NNG has also identified three archeological sites approximately one mile east of the project, which were located in conjunction with the survey conducted for NNG's South Mist Feeder (a separate Energy Facility not being amended here).

NNG also conducted an archeological survey. With the exception of numerous springboard-cut tree stumps, indicative of early twentieth century logging, no resource that might be considered archeological objects were identified. OOE consulted with the SHPO regarding the tree stumps, and the SHPO indicated no concerns.

NNG has committed to monitoring all grading and excavating activities associated with the boring operation by a qualified archeologist. If any artifacts or other cultural materials that might qualify as "archeological objects" are identified, ground disturbing activities will cease until the archeologist can evaluate their potential significance. If the materials are likely to be eligible for listing on the National Register of Historic Places or to qualify as archeological objects or sites, NNG will consult with the SHPO and will comply with the archeological permit requirement administered by the SHPO, currently set forth in OAR 736 Division 51.

Conclusion: Taking into account mitigation, the Project is not likely to result in significant impacts to historic, cultural or archeological resources or archeological objects or sites protected

by this rule.

11. 345-22-100 Recreation

To issue a Site Certificate, the Council must find that the design, construction and operation of a facility, taking into account mitigation, is not likely to result in a significant adverse impact to important recreational opportunities in the impact area. Factors which will be considered in judging the importance of a recreational opportunity include:

- (1) Any special designation or management of the location;
- (2) The degree of demand;
- (3) Uniqueness;
- (4) Outstanding or unusual qualities;
- (5) Availability or rareness; and
- (6) Irreplaceability or irretrievability of the opportunity.

Discussion: NNG considered recreational opportunities within 5 miles of the proposed site boundary. The 5 mile distance is consistent with the definition of "study area" in OAR 345-01-010(50)(g) for a surface facility related to an underground natural gas storage facility.

Specially designated and managed recreational opportunities include County parks, forests, boat dock facilities, and other public and private recreational opportunities identified in the Columbia County Forest, Parks and Recreation Master Plan. The Director of the Columbia County Forest Parks and Recreation Department states that there are no "important" recreational opportunities within 5 miles of the proposed site boundary, taking into account the 6 importance factors listed in the rule. Proposed facilities include a bicycle trail which cross the pipeline route. However, the development of this bicycle trail is at least five years away. Construction of the pipeline will be concluded by the end of 1997. Accordingly, the construction activities will not have any impact on the proposed bicycle trail. Because the pipelines will be buried, they will not affect the bike trail once it is developed.

NNG has also identified fishing opportunities along the Nehalem River and hunting in forested areas. Fishing opportunities will not be affected because NNG will cross the Nehalem using directional drilling, starting at points 300 feet from the river bank and locating the pipe 20 feet below the river bed. There are no important fishing opportunities in smaller tributaries along the pipeline route because those tributaries are currently affected by the agricultural activities and because they are intermittent streams. Hunting opportunities will not be adversely affected because pipeline construction will take approximately four months, with little or no permanent impact on habitat. The pipeline corridor is only a minute fraction of the land available for hunting in the area. It is not unique, rare, or irreplaceable.

Conclusion: The proposed expansion will not result in a significant adverse impact to important recreational opportunities in the area. No new conditions are required.

12. 345-22-110 Socio-Economic Impacts

To issue a Site Certificate, the Council must find that the construction and operation of the facility, taking into account mitigation, is not likely to result in significant adverse impact to the ability of communities within the study area to provide the following governmental services: sewers and sewage treatment, water, stormwater drainage, solid waste management, housing, traffic safety, police and fire protection, health care and schools.

Discussion: NNG considered socioeconomic impacts on a study area within thirty miles of the proposed site boundary. Communities which provide government services in this area included Columbia and Clatsop Counties, the cities of Vernonia and Clatskanie, and the unincorporated community of Mist.

None of these communities provide sewers, sewage treatment, water, stormwater drainage, or solid waste management to the existing storage facility or the surrounding area. Construction of the proposed expansion will last only a few months. Afterwards, the work force at Miller Station may be increased by two or three employees. There are no plans for nearby communities to provide these services in the near term. Therefore, the proposed project will have no affect on their ability to provide these services.

NNG projects that there will be approximately 50 workers from outside the area at the peak of construction. The peak construction period is expected to last only a few months. NNG expects that for this short period of time, workers will find temporary housing in motels within 30 miles. NNG projects that many temporary workers will use travel trailers and recreational vehicles which can be parked at a variety of parks established to accommodate mobile housing. Based on the short duration of construction and the availability of motel facilities and trailer parks in the area, we concur in NNG's assessment that the proposed expansion will not have a significant adverse impact on the communities' ability to provide housing for their own residents.

With respect to traffic safety, NNG has provided information gathered by Oregon Department of Transportation regarding local highway capacity and current use. During the construction phase, the Project would increase traffic on local highways by 250 trips per day. This is a substantial percentage of the 800 trips per day currently reported along highway 47, but a small fraction of the capacity of these highways. Based on the excess capacity of the existing roads and the relatively light traffic associated with construction, the Project should not have a significant adverse impact on traffic safety.

The Columbia County Sheriff and the Vernonia Police Chief state that the proposed construction will not place a significant burden on their abilities to provide police protection.

The Mist-Birkenfield Rural Fire Protection District Chief also commented that the project presents no unreasonable fire hazards. Moreover, the pipeline facilities will have fire protection features as required by federal regulations at 49 CFR 192 and EFSC regulations in OAR 345 Division 24.

There are few existing health care facilities in the area. However, the Mist-Birkenfield Rural

Fire Protection District has a Multiple Casualty Incident Plan in place, has confirmed that it has the supplies and materials necessary to support the plan and has indicated that its resources are available in connection with the proposed expansion. The local RFPD could respond to a fire or emergency at the site more efficiently if members had prior knowledge of the facility. The Application does not state if members of the RFPD make periodic tours of the site. Therefore the Council adopts a condition requiring that NNG provide the RFPD with a detailed tour of the site annually to ensure that members are familiar with it in the event of an emergency.

NNG projects that only three families with potential school age children are expected to come into the area as a result of the proposed expansion. In response to public comments questioning this small number⁵, NNG provided additional information indicating that much of the construction force is already selected and that the workers are not expected to bring school age children with them. In any event, construction is expected to last only a few months, and it is unlikely that families would remain in the area after completing construction.

Conclusion: We conclude that, as conditioned, the Project is not likely to result in a significant adverse impact to the ability of communities within 30 miles of the site to provide any of the government services listed in the rule. We add one new condition regarding annual familiarization tours by the Mist-Birkenfield RFPD.

13. 345-22-120 Waste Minimization

This standard provides that:

- (1) To the extent reasonably practicable, the applicant shall minimize generation of solid waste and wastewater in the construction, operation, and retirement of the facility, and when solid waste or wastewater is generated, recycle and reuse such wastes.
- (2) To the extent reasonably practicable, the accumulation, storage, disposal and transportation of waste generated by the construction and operation of the facility must have minimal adverse impact on surrounding and adjacent areas.

Discussion: In its Application, NNG describes a plan to minimize the generation of solid waste and waste water and the use of water, and to reuse or recycle solid waste and waste water. The application lists the solid wastes expected from the construction phase and describes NNG's existing recycling program.

During operations, NNG will operate essentially the same types of equipment being operated currently. Any change in waste production from the existing facility as a result of this proposed amendment would therefore be incremental. Nonetheless, NNG has provided a description of the recycling and waste minimization measures currently used at Miller Station.

The compression and natural gas treatment operations at Miller Station do not require continuous

⁵ Comments of Local 290, United Association of Plumbers and Pipefitters, regarding the Project's potential impact on schools are addressed in Section V of this Order

use of water. The only consumptive use of water for the construction phase would be one time uses of water for directional drilling and for hydrostatic pressure testing of the pipeline. The hydrostatic test is scheduled at a time when water is abundant in the Nehalem. The Columbia County Watermaster has concurred that the one time use of water for this purpose is not of concern.

NNG uses a recycling and reuse program to minimize waste at its existing facility. The proposed expansion would not significantly increase the production or solid waste or waste water on a continuous basis. NNG has committed to a recycling and disposal program for construction wastes. NNG's description includes the following:

(a) Construction waste materials will be transported to an appropriate recycling facility, or to a nearby sanitary landfill for nonrecyclable goods. Scrap steel and welding rod will be collected and transported to a recycling facility. Silt fence material and straw bales will be transported to a local landfill.

(b) Nonhazardous wastes associated with the Project such as crankcase oil, triethylene glycol and oil/water separator oils will be collected, transported and recycled by a vendor as bunker fuel. Oily rags and oil filters will be incinerated off site by a permitted disposal facility. Granular activated carbon will be collected and sent to a permitted facility for regeneration.

(c) Waters used for pressure testing will be disposed of in a manner consistent with requirements specified in approved permits.

Conclusion: As conditioned, the Project will minimize the generation of solid waste and waste water, and reuse and recycle such wastes, to the extent practicable. In addition, accumulation, storage, disposal and transportation of waste from the Project will have a minimal adverse impact on surrounding and adjacent areas.

14. 345-22-130 Retirement

To issue a Site Certificate, the Council must find that the site, taking into account mitigation, can be restored adequately to a useful, non-hazardous condition following facility retirement.

Discussion: NNG does not foresee retirement of the underground storage facility. However, the Application describes steps NNG would take if the facility were retired.

Pipelines associated with the proposed expansion would be retired in the same manner as existing ones. NNG would inspect pipelines for hazardous materials and would remove any hazardous materials. The above ground portions of the pipelines would be removed and the remaining portion would be capped. The council concurs that this method would adequately restore the site to a useful, non-hazardous condition and would cause less disruption to the environment than removing the lines.

Restoring the site at Miller Station would not be significantly affected by the proposed expansion. Most of the structures and equipment there are not changed by the proposed modifications. Retirement would involve removing steel prefabricated building, concrete slab

foundations, and equipment used for compression and gas dehydration and treatment. Given these factors, the site of Miller Station can be restored to a useful and safe condition.

The Application estimates the cost of retirement at \$310,000, and states that this cost would be offset by \$580,000 in salvage value. The Council did not verify the salvage value estimate. Given that, and because of significant uncertainty regarding the availability of the salvage value to NNG or to the state to cover the cost of restoration, we do not factor in salvage value in considering restoration of the site.

In any case, the costs of retirement are nearly all associated with Miller Station, and are not significantly changed by the Project. The impact on restoration costs attributable to the Project are estimated at approximately \$100,000. The Council concurs with this estimate.

NNG states that it will:

- a) Remove any hazardous material stored in buildings or located in process equipment and dispose of them following applicable state hazardous materials statutes and rules.
- (b) Disassemble the buildings and steel structures, break up the concrete slabs, and dispose of these materials either as scrap or at an appropriate landfill.
- (c) Remove above ground portions of all gathering lines and pipelines.
- (d) If necessary, revegetate the area, including pipeline right of ways, to prevent erosion and encourage habitat development, and.
- (e) Inspect all pipelines and remove any hazardous materials found, and dispose of hazardous materials generated from cleaning the pipelines in accordance with applicable state hazardous materials statutes and rules.

These statements will be added to the site certificate as conditions.

Conclusion: We conclude that, with the above conditions, the site can be restored to a useful, non-hazardous condition.

B. EFSC Public Health and Safety Standards in OAR 345 Division 24

1. OAR 345-24-030 Public Health and Safety⁶

This standard has six parts, as follows:

(1) The following surface facilities related to underground gas storage reservoirs shall be located at distances in accordance with the schedule below from any existing permanent habitable dwelling:

- (a) Major facilities - 220 meters;

⁶ Comments of Local 290, United Association of Plumbers and Pipefitters, regarding the safety of the Project are addressed in Section V of this Order

- (b) Minor facilities, excluding compressors - 15 meters;
- (c) Compressors rated less than 1000 horsepower - 100 meters;
- (d) Roads and road maintenance equipment housing - 15 meters

(2) The surface facilities related to an underground gas storage reservoir shall be constructed and maintained in accordance with the applicable requirements of the U.S. Department of Transportation as set forth in 49 CFR 192 and OAR 860-24-020 in effect as of the date of this rule.

(3) The surface facilities related to an underground gas storage reservoir shall be designed so that noise resulting from operation of the facilities shall not violate standards specified in OAR 340 Division 35 in effect as of the date of this rule

(4) The surface facilities related to an underground gas storage reservoir shall be designed, constructed, operated and retired so as not to allow leakage of natural gas that endangers public health and safety.

(5) A program shall be developed using technology that is both practicable and reliable to monitor surface facilities related to underground gas storage reservoirs to ensure public health and safety

(6) The surface facilities related to an underground gas storage reservoir shall be designed, constructed and operated so as not to produce or contribute to seismic hazards that could endanger the public health and safety or result in damage to property.

Part (1) is met because all facilities listed in part (1) are located at sufficient distances from the nearest permanent habitable dwelling.

Part (2) is met because NNG will comply with Federal regulations in 49 CFR 192. The Oregon PUC administers and inspects to these rules under a delegation from the Federal government. A recent PUC inspection report indicates that the Mist facility is currently in compliance.

Part (3) is met because noise studies submitted by NNG on May 1, 1997 demonstrate that the existing facility complies with noise standards in OAR 345 Division 35. The pipelines and wells do not produce appreciable noise. The new compressor at Miller Station would not increase the noise produced by the existing equipment.

NNG conducted noise testing on February 20 and 21, 1997. Noise measurements were taken at night, when background noise is at a minimum. The compressors at Miller Station were operating at nearly full capacity during the test. Measured noise levels were far below the allowable levels from Table 8 of OAR 340-35-035. Noise levels produced by the new equipment were calculated using manufacturer's specifications. The noise at the nearest noise sensitive location, a habitable dwelling located approximately 6100 feet from Miller station, was projected using conservative assumptions. The calculations assumed temperature and relative humidity conditions at which sound would be least attenuated, with no credit taken for damping by terrain, surrounding buildings or trees. This is conservative because Miller station is located in second growth conifer forest. With these conservative assumptions, calculated noise due to the new

compressor equipment at the 6100 foot distance was below 30 dBA. When added to the existing noise levels measured on February 20 and 21, the projected impact of the proposed modification would increase existing noise levels by approximately 1 dBA. This is still well below the levels allowed by OAR 345-35-035. We conclude that the proposed amendment will not affect NNG's continued compliance with the noise standard. However, the Site Certificate shall be conditioned to require retesting upon completion and operation of the proposed new equipment, with results provided to OOE within one quarter of initial operation.

Part (4) is met because the facilities will be designed, constructed and operated in accordance with federal safety regulation enforced by the PUC. The regulations require measures to prevent leakage, including factory installed pipeline coating, individual joint wrap, cathodic protection and insulation from other pipes that could cause inadvertent electrical contact. The wellhead and pipeline facilities' safety features include relief valves and automatic shutdown systems.

Part (5) is met because an Emergency Shutdown system is in place that can be either manually or automatically activated. It stops all active plant process, closes all plant inlet and outlet valves, shuts off the engine fuel and start gas systems and, upon closure of necessary valves, vents to atmosphere all process and fuel gas within the plant. As methane is lighter than air, the safe location is to vent vertically. These systems are maintained on a regular basis and tested at least annually to assure proper response. Systems are in place to monitor compressor, press and control building atmospheres for the presence of flammable vapors as well as systems that detect the presence of a fire. These instruments will trigger an alarm or plant shutdown when certain preset levels are reached. The plant has a staff of seven operators and maintenance personnel working rotating shifts. A communication link is maintained between the plant and the NNG Operations control room in Portland.

NNG will expand its Emergency Plan from the original storage development to include the proposed additional reservoir and equipment associated with the Project. This shall be added to the Site Certificate as a condition.

Part (6) is met because the proposed facility complies with the EFSC Structural Standard. We have found that the facility can be designed, constructed and operated to avoid seismic hazards listed in ORS 455.447(1)(d).

2. OAR 345-24-060 Public Health and Safety Standards for Pipelines

This standard has 5 parts, as follows:

- (1) This rule applies to all pipelines under Council jurisdiction.
- (2) Pipelines shall be constructed in accordance with the requirements of the U.S. Department of Transportation as set forth in 49 CFR part 192, in effect as of the date of this rule.
- (3) A pipeline shall be designed so that noise resulting from operation of compressor station and other related and supporting facilities shall not violate standard specified in OAR 340 Division 35, in effect as of the date of this rule.
- (4) A pipeline shall have mechanical structures that allow the pipeline to be sealed off, in

the event of leakage, in a manner that will minimize the release of flammable materials. This is rebuttably presumed to be satisfied by the requirements of Title 49, Code of Federal Regulations, Part 192, in effect as of the date of this rule.

(5) A program shall be developed using the best available practicable technology to monitor a proposed pipeline to ensure protection of public health and safety.

Part (1) does not contain a standard.

Part (2) of this rule is met because NNG will construct the proposed pipelines in accordance with 49 CFR 192 in effect on November 30, 1994, the effective date of the rule. Inspection and enforcement of 49 CFR 192 has been delegated by the federal government to the Oregon PUC. The PUC inspected the Mist facility in May 1996 and found it to be in compliance.

Part (3) is met because noise testing conducted in February 20 and 21, 1997 demonstrated that the existing facility complies with OAR 340 Division 35 noise standards. The Project meets the identical requirements at OAR 345-24-030(3). Moreover, vibration monitoring has been performed quarterly since the first year of Mist storage operations, with no reports of vibrations potentially related to Mist operations.

Part (4) is presumed to be satisfied because the pipelines will be constructed in accordance with 49 CFR 192 regulations. Isolation valves will be located at both ends of the 16 inch gathering lines terminating at Miller Station and at both ends of the eight inch and six inch gathering lines connecting the well sites with the 16 inch lines. 49 CFR 192.179.

Part (5) is met based on NNG's program to monitor the pipelines to ensure protection of public health and safety. Pressure sensing devices are positioned on the pipelines at Miller Station and near the wellheads to relay critical information to both Miller Station and the Portland gas control centers. High and low pressure alarms monitored on a 24 hour basis detect and locate areas where pressure variations may indicate abnormal conditions. Trained emergency response personnel are on duty 24 hours a day, at Miller Station or in Portland, to react to situations that require immediate attention. In its 1981 Final Order granting the Site Certificate, the Council found NNG's monitoring program acceptable and in compliance with EFSC monitoring requirements. There is nothing in the Application for the proposed expansion to invalidate EFSC's 1981 finding.

NNG has committed to comply with 49 CFR 192 requirements in construction and operation of the proposed expansion, and to use the same operation and maintenance procedures. NNG has committed to installing the isolation valves described in connection with part (4) of this rule, and to installing the pressure sensing devices and pressure alarms described in connection with part(5) of this rule. NNG has committed to having trained emergency response personnel on duty 24 hours a day, at Miller Station or in Portland, to monitor the pressure alarms on a 24 hour basis. These commitments shall be added to the Site Certificate as conditions. Further, we add a condition requiring further noise testing upon initial operation of the expanded facility and the results reported to OOE. With these conditions the Council concludes that the Project meets OAR 345-24-060.

C. Requirements of Other Agencies

The proposed pipeline will cross wetlands and will require a removal/fill permit in accordance with Division of State Lands regulations.

NNG will hydrostatically test the proposed pipeline, requiring a one time withdrawal of water from the Nehalem River. NNG will require a Limited Water Use License from the Water Resources Department.

Upon completion of the hydrostatic test, NNG will dispose of the water using land application. NNG will require a limited use Water Pollution Control Facilities (WPCF) permit from the Department of Environmental Quality.

Operation of the new compressor will require an update to NNG's Air Contaminant Discharge Permit. That permit has been delegated by the federal government to the Department of Environmental Quality.

1. Wetlands⁷

Oregon Removal-Fill Law (ORS 196.800 through 196.990) and the Division's Removal-Fill rules (OAR 141-85-005 to 141-85-090) are applicable to the Project. A Removal-Fill Permit is needed if 50 cubic yards or more of material is removed, filled or altered within any "waters of the state" at the proposed site. Under the Removal-Fill Law, "waters of the state" include wetlands. The Council must determine compliance with applicable DSL regulations in order to approve the application. ORS 469.503(1)(b), OAR 345-22-000.

Discussion

For purposes of evaluating the effect of the Project on wetlands, the area within 500 feet from the energy facility site boundary and 500 feet on either side of the proposed rights-of-way for pipelines was considered as the project impact area.

In April of 1997, Northwest Natural Gas submitted an application to DSL for the purpose of obtaining a permit to allow for the trenching and filling of wetlands for the placement of a natural gas pipeline. On February 21, 1997, the applicant engaged Dames & Moore to identify any wetlands that would be impacted by the placement of the gas line. Dames & Moore identified 5 wetlands that will be impacted by the placement of the gas line. The location of the wetlands to be impacted is Township 6 North, Range 5 West, Sections 14, 15, 22 and 23 within Columbia County near Mist, Oregon. Wetland descriptions are as follows:

Wetland No. 1

This wetland is the most significant wetland. This wetland is dominated by at least three types of cover and is part of a larger wetland complex that extends further along the base of the hill. This wetland has already been crossed by one gas pipeline. The first pipeline was laid about 10 or more years ago. The site has completely restored itself to its original and native

⁷ Comments of Local 290, United Association of Plumbers and Pipefitters, regarding potential impact on wetlands are addressed in Section V of this Order.

condition and shows no signs of disturbance. The impact to this wetland is 0.23 acres and the amount of removal/fill is estimated to be 170 cubic yards. The size of the removal/fill site is 125 feet in length, six feet wide and six feet in depth.

Wetland No. 2

This wetland also has an existing pipeline through it and lies adjacent to Wetland No. 1. It also is located at the base of the hill and drains into the adjacent wetland. The impact to this wetland is 0.15 acres and the amount of removal/fill is estimated to be 110 cubic yards. The size of the removal/fill site is 80 feet in length, six feet wide and six feet in depth.

Wetland No. 3

This wetland has very low functions and values. It is located between Wetland No. 1 and the Birkenfield Hwy. The wetland consists entirely of grasses that were planted for the purpose of cutting hay and is situated within a shallow swale. The impact to this wetland is 0.12 acres and the amount of removal/fill is estimated to be 100 cubic yards. The size of the removal/fill site is 75 feet in length, six feet wide and six feet in depth.

Wetland No. 4

This wetland consists of a very shallow draw that is cut into by an old logging road. The hydrology at this site is mostly seasonal runoff with occasional groundwater discharge. The area is very disturbed due to all the logging activities that have taken place here over many years. The impact to this wetland is 0.04 acres and the amount of removal/fill is estimated to be 34 cubic yards. The removal/fill site is 50 feet in length, three feet wide and six feet in depth.

Wetland No. 5

This wetland is located on the slope just above the old logging road and the edges of it have been severely disturbed. The hydrology appears to be seasonal and is dominated by soft rush. The impact to this wetland is 0.01 acres and the amount of removal/fill is estimated to be 27 cubic yards. The removal/fill site is 40 feet in length, three feet wide and six feet in depth.

Unnamed tributary:

There is a small tributary to the Nehalem River that also must be crossed by the pipeline. It is located in a pasture that is heavily used for grazing which has rendered the stream void of any fish habitat within this area. The impacts at this location will be 0.005 acres and the amount of removal/fill is estimated to be eight cubic yards. The removal/fill site is six feet in length, six feet in width and six feet in depth.

Wetland No. 6

This wetland will only be affected by removal/fill if the well site is developed. At this time the applicant has included the site in the total amount of removal/fill impact, but it is unknown if they will need to use this location or not. The impacts at this wetland would be 0.03 acres and the amount of removal/fill is estimated to be 154 cubic yards. The size of the removal/fill site is 115 feet in length, 12 feet in width and three feet in depth.

In consultation with DSL, we have analyzed these proposed removal/fills against the

legal standards from the Removal-Fill Law and administrative rules. We conclude that permits may be issued for each of the removal fills, provided that all unavoidable wetland impacts are fully mitigated in compliance with approved mitigation plans pursuant to the conditions in this order.

Statutory standards from ORS 196.825

ORS 196.825(1) provides the overall decision standard for permitting wetland removals. It provides that "the director shall issue a permit to remove material from the beds or banks of any waters of this state * * * if the director determines that the removal described in the application will not be inconsistent with the protection, conservation and best use of the water resources of this state * * *."

The Removal-Fill Law provides permitting standards for fill and removal. ORS 196.825(2) provides the overall decision standard for permitting wetland fills. It provides that a permit shall be issued for filling waters of this state only after a determination that "the proposed fill would not unreasonably interfere with the paramount policy of this state to preserve the use of its waters for navigation, fishing and public recreation."

We conclude that the wetland fills and removals meet this standard because:

(a) the impacted wetlands do not now offer major values related to public navigation, fishing and recreation;

(b) the resulting wetland fills and removals are not significant, and the impacted wetlands will remain viable and will continue to offer wetland functions and values.

ORS 196.825(3) requires consideration of certain factors in determining whether grant a fill permit:

"(a) The public need for the proposed fill and the social, economic or other public benefits likely to result from the proposed fill * * *."

The statute here (and in all but one of the other considerations) addresses the proposed "fill," obviously distinguishing it from what the statute calls the "project." ORS 196.800(5) defines "fill" as "the total of deposits by artificial means equal to or exceeding 50 cubic yards or more of material at one location in any waters of the state." Thus, the statute limits our consideration here to the public need for the proposed pipeline that is proposed to be placed within jurisdictional wetlands. DSL advised, and we concur, that there is a public need for fills that would enable siting of necessary pipelines in an efficient and environmentally sensitive manner.

"(b) The economic cost to the public if the proposed fill is not accomplished."

Without the proposed wetland fills for the pipeline, the line would have to be re-routed to skirt each of the wetlands. Such re-routing would result in a considerably longer route, thereby increasing the costs of construction and right of way acquisition and expanding the scope of disruption for nearby residents.

"(c) The availability of alternatives to the project for which the fill is proposed."

The most practicable route for the pipeline depends on the proposed wetland fills.

"(d) The availability of alternative sites for the proposed fill."

The proposed wetland fills for the preferred route would affect only small, isolated wetland sites.

"(e) Whether the proposed fill conforms to sound policies of conservation and would not interfere with public health and safety."

The proposed fills minimize impacts to wetlands and other waters of the state and minimize potential hazards to health and safety.

"(f) Whether the proposed fill is in conformance with existing public uses of the waters and with uses designated for adjacent land in an acknowledged comprehensive plan and zoning ordinances."

"(g) Whether the proposed fill is compatible with the acknowledged comprehensive plan and land use regulations for the area where the proposed fill is to take place."

All the fills are under Columbia County's land use jurisdiction. The County has certified that the proposed fills for the pipeline comply with the local plan.

"(h) Whether the proposed fill is for stream bank protection."

The proposed fills have no relation to stream bank protection.

Administrative Rule Standards

OAR 141-85-050(1) requires an evaluation of probable impacts, "including cumulative impacts, of the proposed [fill] activity and its intended use on the water resources" by considering certain factors in addition to those required by the statute:

"(a) The environmental and economic consequences of the proposed fill."

As described above, the proposed fills will have minimal environmental impact, especially since the area to be filled for the pipeline is planned to be restored. Moreover, there appear to be no adverse economic consequences of the fills.

"(b) Direct and indirect effects of the fill on submerged and/or submersible lands."

The fills would avoid any waterway with state-owned submerged and submersible lands.

"(c) Effects of the fill on the hydraulic characteristics of the fill site and surrounding areas, such as water circulation, tidal fluctuation, current patterns and flood hazards."

The proposed fills will have no measurable effects on the hydraulic characteristics of the wetlands, because the fills are relatively small and the wetlands receive their water from precipitation and local runoff.

"(d) Effects of the fill on special aquatic sites and refuges, sanctuaries and scenic waterways."

The proposed fills will have no such impacts.

"(e) Effects of the fill on water supply, water access, public recreation and aesthetics."

The proposed fill will not affect water supply or water access, and there is no current public recreation use of the impacted wetlands. There is not likely to be an effect on aesthetics, since the impacted wetlands are small and aesthetic values are not high.

"(f) Effects of the fill on water quality and aquatic life and habitats."

Since the impacted wetlands are small and do not include significant aquatic habitats and since the fills are relatively minor, there will be no significant effects on aquatic life and habitats.

OAR 141-85-050(2) requires consultation with local governments to determine that the proposed fills are consistent with the local comprehensive plan and ordinances and planning goals. DSL has conferred with local government and advises that the proposed fills are consistent with the local comprehensive plan and ordinances and planning goals.

OAR 141-85-050(3) provides that no fill permit can be issued until certain determinations are made:

"(a) The project is consistent with the water quality and toxic effluent standards of the State of Oregon as administered by the Oregon Department of Environmental Quality and would not result in significant degradation of the waters of the state."

The Department of Environmental Quality has not identified any water quality concerns in connection with the proposed fill. DSL recommends a condition to limit turbidity will be added to the site certificate, using standard language which has been agreed to by DEQ for general use in wetland permits. The affected wetlands will be restored, which will preserve their functional value. Therefore the minimal impacts of the fills be of limited duration and would not result in significant degradation of the waters of the state.

"(b) The project meets historical and archaeological site preservation requirements of ORS 390.235."

The SHPO has reviewed the Application and has no concerns. The Application identifies no cultural resources protected by ORS 390.235 that would be affected by the fills. The Council has also determined that the facility complies with its standard on Historic, Cultural and Archaeological Resources, OAR 345-22-090.

"(c) There is no practicable alternative to the proposed fill which would have less adverse impact on the water resources of the State of Oregon."

As noted above, the expected impacts are minor, and (from an economic or engineering perspective) there are no practicable alternatives for transmitting gas from the Mist field.

"(d) The project would not adversely affect rare, threatened or endangered species in the State of Oregon * * *."

No rare, threatened or endangered species are known to be adversely affected by the proposed fills. The Council has determined that the facility complies with its standard on

Threatened or Endangered Species, OAR 345-22-070.

"(e) The project individually or collectively would not cause significant degradation of municipal water supplies; aquatic life and habitats; functions of the aquatic ecosystem; or recreational, aesthetic and economic values of the water resources of the state."

All unavoidable impacts of the proposed fills (which would be minor) would be offset by restoration of all affected wetland areas. Therefore, there would be no net degradation.

"(f) Appropriate and practicable steps have been taken which will minimize adverse impacts of the fill on aquatic life and habitats."

As noted above, all aspects of the proposed fills (location, engineering, timing, equipment access, etc.) have been designed to minimize impact as much as practicable. Also, any unavoidable impacts will be fully mitigated.

OAR 141-85-045, which governs removal permits, makes it the responsibility of the state to, "where reasonable, possible and appropriate, to provide for multiple use of the water resources of the state consistent with long-term conservation of those resources under sound techniques of waterway management." To accomplish that goal, the rule requires consideration of certain factors in relation to the proposed removal:

"(1) The environmental and economic benefits and detriments of the proposed removal."

This was addressed above in relation to the proposed fills.

"(2) Whether the proposed removal activity adversely affects the health, safety and welfare of the people of this state."

There would be no such effect, because of the relatively minor nature of the removals, the remote and unpopulated area in which they would occur, and the requirement to restore the site after placement of the pipeline.

"(3) Whether the proposed removal activity is inconsistent with existing and potential uses of the water resources of the state, such as"

- (a) Water and materials for domestic use, agricultural use and industrial use;
- (b) Habitats and spawning areas for fish;
- (c) Avenues for transportation; or
- (d) Sites for commerce and public recreation."

The proposed removals would not be inconsistent with such uses, largely because the wetlands and small tributary involved do not offer such uses. The only exception might be the small tributary, which may offer some habitat and spawning areas for fish. However, the relatively minor impact on the stream and the required restoration after the placement of the pipeline should avoid any permanent impact.

"(4) Whether the proposed removal activity significantly adversely affects the hydraulic characteristics of the water body such as direction and velocity of flow, elevation of water

surface, sediment transport capacity, or stability of the bank or shore."

Because all but one of the water bodies to be affected are wetlands, most of these concerns are not relevant. As to the small tributary, site certificate conditions will ensure no significant adverse effects.

"(5) Whether the proposed removal activity adversely affects water quality or aquatic life and habitats."

This factor was addressed above concerning fills.

"(6) Whether the proposed removal is consistent with local comprehensive plan and ordinances and Statewide Planning Goals and the other policies of the Removal Fill Law and these administrative rules."

This factor was addressed above concerning fills.

For these reasons, we conclude that the facility complies with ORS 196.825 and OAR 141-85-045 and 141-85-050. To ensure continued compliance with these statutes and rules DSL has recommended, and we approve, the following conditions for inclusion in the site certificate:

(1) NNG shall minimize impacts for the Category 2 wetland north of highway 202 by taking steps including but not limited to:

(a) using a single trench for dual pipelines and keeping the installation as narrow as possible while remaining consistent with safety and practical installation requirements.

(b) timing construction for the dry time of year, not to extend beyond November 15.

(c) separating and returning topsoil to the trench backfill surface for pipelines and installing clay barriers at each end of the wetland crossing.

(d) avoiding the rest of the wetland during construction by use of the existing road through the wetland for construction equipment.

(2) NNG shall restore habitat in the Category 2 wetland to the north of highway 202 to preconstruction conditions within two growing seasons.

(3) NNG shall minimize impact to wetlands by separating the upper foot of topsoil from the rest of the trench spoils and replacing it on the top of the trench.

(4) NNG shall filter any water pumped from the trench during construction to remove sediments before it is returned to the wetland.

(5) NNG shall complete pipeline construction through the wetland by November 15, 1997.

(6) Turbidity shall not exceed 10% above natural stream turbidities as a result of the project except that the Department of Environmental Quality allows that the 10% limit may be exceeded for a limited duration, provided all practicable erosion control measures have been implemented, including but not limited to:

a. use of filter bags, sediment fences, catch basins or other means to prevent off site movement of soil

- b. use of impervious covers for stockpiles left unattended or during a rain event,
- c. waste materials and spoils shall be placed on uplands, such that the material cannot reenter a waterway or wetland, and
- d. all areas of soil disturbance shall be seeded or otherwise revegetated with native species upon completion of construction to prevent subsequent erosion.

2. Limited Water Use License (ORS 537 and OAR 690)

NNG proposes to use approximately 300,000 gallons of water from the Nehalem River at the rate of 600 gallons per minute for hydrostatic testing of the new gas pipeline. The use will occur between September 1, 1997 and November 15, 1997. This will require a limited license to use water, which is governed by ORS 537.143 and OAR 690-340-030. Under ORS 537.143, a limited license may be issued to use surface water for any use of a short-term or fixed duration. OAR 690-340-030 requires submission of an application to the Water Resources Director (WRD), payment of a fee, and notice to the WRD's mailing list, all of which steps have been taken here. The rule imposes certain reporting requirements, which WRD has recommended as conditions of the limited license. We concur in those conditions and adopt them in this order.

Conclusion: The proposed water use meets the requirements of ORS 537.143 and OAR 690-340-030. The following conditions will ensure continuing compliance.

Conditions:

- (1.) The licensee shall install, maintain and operate fish screening and by-pass devices as required by the Oregon Department of Fish and Wildlife to prevent fish from entering the proposed diversion. The required screens and by-pass devices are to be in place, functional and approved by an Oregon Department of Fish and Wildlife representative prior to diversion of any water.
- (2.) The use shall be allowed only at times when the Watermaster has determined the flows of the source stream, namely the Nehalem River, are sufficient to satisfy instream water rights.
- (3.) The licensee shall give notice to the Watermaster not less than 15 days or more than 60 days in advance of using the water. The notice shall include the location of the diversion and place of use, the quantity of water to be diverted and the intended use.
- (4.) The licensee shall maintain a record of use, including the total number of hours of pumping, an estimate of the total quantity pumped, and the categories of beneficial use to which the water is applied. The record of use shall be submitted to the Watermaster upon request.
- (5.) The limited license is effective for use between September 15, 1997 and November 15, 1997

3. WPCF permit requirements

NNG proposes to withdraw water from the Nehalem River to pressure test the new pipeline. The water will then be discharged to pasture lands where it will be absorbed into the soil.

A Water Pollution Control Facility (WPCF) permit is required for this type of discharge pursuant to ORS 468B.025 and 468B.050 and OAR Chapter 340, Divisions 14 and 45. No discharge to surface waters may be allowed under a WPCF permit. Discharges allowed under a WPCF permit must not cause contamination of groundwater. ORS 468B.155; OAR 340, Division 40.

NNG will use water from the Nehalem River to conduct the testing. No solvents or oils will be added because none are used in the manufacturing, coating or installation of the pipe. NNG will construct an enclosure of straw bales and silt fence material in the pasture to receive discharge waters. The straw bales will reduce the discharge water velocity for erosion control and will act as a filter to reduce water turbidity. With these measures, the discharge of the water used for testing will not cause contamination of groundwater.

DEQ has reviewed the proposal and recommends approval with the following conditions:

1. No discharge to State waters is permitted. All waste water shall be distributed on land for dissipation by evapotranspiration and controlled seepage by following sound irrigation practices to as to prevent:
 - a. Prolonged ponding of waste on the ground surface;
 - b. Surface runoff or subsurface drainage through drainage tile;
 - c. Creation of odors, fly and mosquito breeding and other nuisance conditions, and
 - d. The overloading of land with nutrients or organics.
2. NNG shall, during all times of disposal, provide personnel whose primary responsibilities are to assure the continuous performance of the disposal system within the limitations of the permit.
3. Prior to land disposal of the waste water it shall be treated by filtering through straw bales.
4. Unless approved by EFSC and DEQ, waste water that is disposed of on land but not used to irrigate crops shall be disposed of on a deep-rooted cover crop to ensure maximum infiltration and evapotranspiration rate.
5. Prior to constructing or modifying any waste water control facilities, detailed plans and specifications shall be approved in writing by EFSC and DEQ.
6. An adequate contingency plan for prevention and handling of spills and unplanned discharges shall be in force at all times. A program of employee orientation and education shall be maintained to ensure awareness of the necessity for good inplant control and proper action in the event of a spill or accident.

We concur and approve the activity, subject to the conditions recommended by DEQ.

V. ISSUES RAISED IN PUBLIC COMMENT

A. Issues raised by United Associated of Plumbers and Pipefitters Local 290 (UA)

UA commented in writing on the Application on May 1, 1997. UA's written comments included

the following⁸:

Request for Contested Case

UA stated that a contested case is necessary to address all of the issues below and to ensure that sufficient evidence is provided to properly assess NNG compliance with EFSC Standards and with public safety requirements. See also discussion below regarding Linda Williams' comments.

Public Safety Concerns:

- Problems at natural gas pipelines and storage facilities, at Mist and in other states, have endangered public health and safety. These problems include explosions and leaks.
- Leaks at NNG pipelines have been caused by a construction backhoe and by a blown relief valve.
- The Application does not address Pipeline Safety Advisory Bulletin SDB-94-05. This Bulletin mandate pipeline surveillance and rapid deployment of personnel in storm events. Surveillance of the pipeline in wetland areas could be more difficult if the vegetation over the pipeline is completely restored, as it will be.
- UA stated that possible toxic waste issues at NNG facilities in Linnton and Salem should be considered.
- UA cited four incidents of natural gas pipeline accidents in various states, in which people were killed or injured, including an explosion at a Texas gas storage facility caused several deaths and injuries, explosions in Washington State along the Northwest Pipeline (not operated by NNG, and under FERC jurisdiction) were attributed to saturated soil movement. NNG's proposed pipeline route is also subject to landslides due to saturated soil conditions. Also, large earthquakes are considered credible. Pipeline failures in floodplain near Houston Texas endangered public health and safety. The pipelines were presumably constructed in accordance with the same 49 CFR 192 regulations applicable to the proposed NNG pipeline. This concerns UA because heavy rains have washed out roads in the Mist area. The proposed pipeline might also be subjected to flood borne debris and extreme forces of flowing water.

Socio Economic Impact Concerns

- UA states that NNG's assertion that only three families with school age children will move into the area during the construction is unsupported.
- UA requested more detailed information on how local fire departments would respond to an emergency, and further detail on the past fires at Miller Station.

⁸ By letter dated May 29, 1997, Local 290 (UA) stated that, upon further review of information supplied by NNG, their concerns were satisfied that they endorse the Project.

Past Violations:

- UA stated that documentation of technical expertise is insufficient, in that Engineering and Construction contractors named by NNG have been cited for safety violations in the past which are not disclosed in the Application. UA stated that there have been loss time accidents at Miller Station and other NNG facilities, and that the lack of citations at Miller station is due to a lack of OSHA inspection.
- UA stated that NNG has violated cathodic protection rules and corrosion inspection regulations at Miller Station.

Wetland Concerns

UA states that the pipeline route would cross several wetlands, and states that additional evidence should be provided concerning the acceptability of the pipeline route. UA believes that the U.S. Army Corps of Engineers Hydrogeomorphic Approach or the U.S. Fish and Wildlife Wetland Evaluation Procedure should have been used to assess wetland impacts.

Other Concerns

- UA requested further information concerning "jurisdictional service incidents".
- NNG's statement that Mist is the only producing well in Oregon is unclear, because Mist is not producing at this time.
- The Application includes inconsistencies in the rated horsepower of the compressors.

B. Consideration of UA Concerns

Public Safety Concerns

Concerning incidents of pipeline leaks due to the construction backhoe and the relief valve, the pipelines in question were smaller than sixteen inch lines and were not under EFSC jurisdiction. The lines associated with this amendment would be in a forty foot right of way, which should preclude unauthorized digging or construction by persons other than NNG. With respect to the relief valve, relief valves are required by 49 CFR 192 and are designed to relieve pressure if necessary. These same federal regulations also require maintenance of the relief valves. NNG will maintain relief valves and other safety related equipment in accordance with the same program currently in place at the existing facility. Therefore the risk of pipeline leakage from construction related digging or uncontrolled valve leakage is very low.

Concerning Bulletin SDB 94-05, NNG has the capability for pipeline surveillance and rapid deployment of personnel in the event of a storm because the Mist storage facility is manned 24 hours per day and because the pipeline requested is less than 5 miles in length. Surveillance of a pipeline is not affected by the recovery of the vegetation at the surface because the pipeline is underground. Rapid changes in pressure, indicative of a problem, would be detected by the pressure sensing devices and high and low pressure alarms. In case of an unexpected reduction in pressure, personnel at Mist have the capability to isolate the line using isolation valves at Miller Station and at the wellheads.

Mr. Williams raises concerns about toxic materials at two former manufactured gas plant sites at Linnton and Salem. Those sites bear absolutely no relationship to the Project. With respect to a more generalized concern about toxic materials, OOE inspected Miller Station in November 1996 and found that NNG uses only small amounts of lubricants, engine coolants and industrial solvents normally required for maintenance of the compressors and gas treatment equipment. Any hazardous materials needed for this purpose are handled in accordance with DEQ requirements. The gas storage activities at Mist do not produce a toxic waste. Therefore the Mist site is unlikely to become a toxic waste site.

Regarding hazards due to earthquake and landslide, the proposed project meets the EFSC Structural Standard, OAR 345-22-020. The pipeline will be designed accommodate ground motions from the maximum credible earthquake for that location. The pipeline route was changed to avoid areas with landslide potential. Where the pipeline must follow sloping or hilly terrain, the route is designed to be perpendicular to the slope, not parallel to it. This minimizes the stress on the pipeline in the unlikely event of mass movement due to saturated soils. NNG will radiograph 100% of the welds along the pipeline to ensure no defects. Moreover, DOGAMI has reviewed the Application for avoidance of the seismic hazards and states that:

"The recent natural gas pipeline failures and resulting explosions in Washington have been attributed to landslides causing rupturing of the pipelines. Therefore, it is critical for natural gas pipelines to be located in areas that avoid known landslides and areas which have particular susceptibility to future landslides including seismically induced landslides. The applicant has included extensive analysis of landslides at the project area including geological and soil erosion analysis with maps and other data which indicate the proposed pipeline route from the Calvin Creek Storage area to the Miller Station will bypass areas of slope instability and landslide potential."

Regarding forces on the pipeline due to flowing water, the pipeline will be underground along its entire length, at a depth of at least six feet as required by 49 CFR 192. The Nehalem river crossing will place the pipeline 20 feet beneath the river bed, so that forces from flowing water will not affect the pipe. Therefore, the facility is designed to minimize the risk of all seismic hazards and flood hazards.

Regarding pipeline related events in other states, the Council has no jurisdiction in those states. UA states that presumably those pipelines were constructed in accordance with 49 CFR 192. However, the Council determined in its rulemaking of November 1994 that the standards of 49 CFR 192 were appropriate for jurisdictional gas pipelines and for pipelines associated with underground gas storage facilities.

We therefore conclude that the proposed pipeline will meet the Council's public health and safety standards in OAR 345 Division 24, and contains appropriate design and monitoring features to ensure public health and safety.

Socio-Economic Concerns

NNG has provided additional information concerning the number of school age children entering the area during construction of the proposed expansion. The estimate of additional

school age children entering the area is based on the relatively small number of workers expected from outside the area and the short duration of construction.

Regarding the facility's impact on fire protection services, the Fire Chief of the Mist-Birkenfield Rural Fire Protection District, has commented favorably on the proposed expansion. Agreements between NNG and Mist-Birkenfield RFPD have helped to ensure that adequate personnel and apparatus are available for an emergency (Application, Exhibit 38). Columbia County has found the proposed expansion in compliance with Zoning Ordinance 504, which requires that " the use does not constitute an unnecessary fire hazard and provides for fire safety measures in planning, design, construction and operation." The site has many established fire detection and prevention facilities on the site, including gas leak detector, alarms, fire extinguisher, a 20,000 gallon water tank and an on site truck. Therefore, the proposed expansion is not expected to adversely impact the Mist-Birkenfield RFPD's ability to provide Fire Protection services.

Organizational Managerial and Technical Expertise Concerns

With regard to possible past violations by KTI Fish in other states, the Council made findings of compliance with OAR 345-22-010 based primarily on the qualifications of NNG, not its contractor. Moreover, a detailed citation history of each contractor associated with the project is not required even by OAR 345 Division 21 requirements for a new Site Certificate. The Organizational, Managerial and Technical Expertise that is being assessed is that of the Applicant. The proposed amendment would not allow NNG to operate a different type of facility from the one they are already operating, but would merely enlarge the size of the current facility.

Regarding concerns over loss time accidents and potential OSHA violations, there is no evidence to suggest that NNG's occupational safety record compares unfavorably with typical industrial companies of similar size. A detailed list of loss time accident at the site is not one of the factors listed for consideration in OAR 345-22-010. Moreover, nothing in any EFSC standard directs EFSC to assume a history of violations in cases where there are few inspections.

Regarding concerns with cathodic protection and corrosion inspection violations, both cathodic protection and maintenance practices were within the scope of the inspection documented in Application Exhibit 9. OOE provided a copy of the Application to the OPUC Pipeline Safety Chief on March 25, 1997, along with a request for comments by May 1. No adverse comments have been received.

Wetland Concerns

The pipeline route, through the identified wetlands, was chosen to avoid areas of soil instability and landslide potential in accordance with EFSC's Structural Standard and to protect public safety. The wetlands in question were categorized, with one exception, as ODFW Habitat Category 4 (low value) because of existing disturbance by timber and agricultural activities. Impacts to the one Category 2 wetland will be minimized by limiting construction to the dry season and by other conditions identified in connection with EFSC's Fish and Wildlife Habitat Standard. Qualified inspectors from ODFW, DSL and the U.S. Army Corps of Engineers

inspected the wetlands in question on April 23, 1997 and concluded that the proposed pipeline route meets DSL and U.S. Army Corps requirements.

Other Issues

The term "jurisdictional service incidents" appears to refer to a Federal Energy Regulatory Commission (FERC) reporting requirement. The Mist facility is not under FERC jurisdiction and would have no reporting requirements to FERC. The term "jurisdictional service incident" would not apply to Mist.

The statement that Mist is the "only producing well" in Oregon was not part of the basis for any finding of compliance with any standard. It was provided for information only and was not used in this analysis.

EFSC has confirmed the horsepower of the compressor proposed for installation at Miller Station. The application correctly describes the horsepower rating of the compressor that NNG would purchase, and the compression requirements of the Project. EFSC has clarified the horsepower requirements of the Project in Section II.B of this Proposed Order. The site certificate will be conditioned to require that the compressors at Miller Station be operated so as to achieve a maximum compression horsepower of 6,650 BHP.

Conclusion

A contested case is not required because the Application provides the required information to find compliance with EFSC standards. Regarding issues of public health and safety, our findings are based not only on the Application but on consultation with DOGAMI regarding seismic and landslide hazards. EFSC has consulted similarly with OPUC. A contested case is not necessary to determine NNG's record regarding violations of 49 CFR 192 because OPUC inspects to those standards under delegation from the federal government.

Regarding other concerns, NNG has provided supplemental information which addresses the concerns of UA. Further, there was an opportunity for concerned members of the public to address the Council at its meeting of May 30, 1997, a comment period following publication of the department's proposed order, and a final opportunity to address the Council at its meeting of July 21, 1997.

C. Concerns Raised by Linda Williams, Attorney for UA

Linda Williams filed comments on the application on behalf of Local 290, United Association of Plumbers and Pipefitters, its Business Manager Matt Walters, and interested members ("Local 290"). The Office of Energy offers the following in response to the comments.

A. Jurisdictional issues.

Local 290 argues that the Project is "energy facility" under ORS 469.300(9), and thus that an original site certificate, contested case hearing, and compliance with Division 21 on contents of a site certificate application, are required. For the reasons that follow, the facilities proposed are not jurisdictional energy facilities. They are changes to existing certificated facilities, and are

correctly addressed in a site certificate amendment proceeding. Division 21 does not apply.

1. The new surface facility is not jurisdictional.

Local 290 argues that because the new compressor is rated at 5,035 BHP the Project is a stand alone "energy facility" under ORS 469.300(9)(a)(H), which confers council jurisdiction over a:

"surface facility related to an underground gas storage reservoir that, at design injection or withdrawal rates, will receive or deliver more than 50 million cubic feet of natural or synthetic gas per day, and require more than 4,000 horsepower of natural gas compression to operate***."

Local 290 is incorrect. The new underground gas storage reservoir will receive or deliver only 45 million cubic feet of natural gas per day and will require a maximum of 2,150 horsepower of compression to operate. Consequently it is not an energy facility. NNG seeks approval to operate the new compressor up to 5,035 horsepower, to remove the existing 550 horsepower compressors and to operate the remaining two 1,350 compressors so as to achieve a maximum compression horsepower of 6,650 BHP, which is 2,850 BHP greater than the current site certificate allowance. The site certificate will be conditioned to require compressor operation as described above. This would enable NNG to achieve the current permitted rate of 100 Mmcf/d from storage reservoirs currently in operation. The Project does not require 5,035 horsepower. The incremental capacity of the compressor units will be useable for future storage expansions at Mist, if such expansions prove to be viable and are approved by appropriate regulatory agencies, including the Council, in the future.

2. The council must act on the activity proposed.

Because NNG's application describes potential future development at the site, Local 290 claims that NNG is attempting to "piecemeal and segment a larger action in order to avoid ever having to prove need for power for the proposed facility." Comments at 3. However, NNG's application explains that future plans are tentative. It does not know whether, where or how that development will occur. It would be premature for the Council to attempt to site potential future development at this time. Moreover, NNG has not asked the Council to take such action at this time.

In addition, the facility is exempt from the council's need standard. OAR 345-23-010(1)(f).

3. The pipelines are not jurisdictional.

NNG proposes to lay two 16" diameter pipelines, each approximately 2 1/2 miles long, parallel to each other in the same right of way. The pipelines would be separated from each other by approximately 10 feet. NNG proposes to excavate one trench, approximately 2 1/2 miles long, to lay the pipe.

Under ORS 469.300(9)(a)(E)(ii), a pipeline that is "at least 16 inches in diameter, and five or more miles in length, used for the transportation of natural or synthetic gas" is an "energy facility" within the council's jurisdiction. NNG proposes to lay two 16 inch pipes side by side in the same right of way about 2 1/2 miles long. Because two pipes will be laid, Local 290 argues

that NNG's pipeline is actually "five or more miles in length" and thus that they require an original site certificate.

The designation of council jurisdiction at five miles undoubtedly reflects a decision that ground disturbance over a length of more than five miles would be significant enough to trigger council jurisdiction. NNG's proposal for 16" pipe will require 2 1/2 miles of ground disturbance in a single right of way. Given that circumstances, Local 290's interpretation of ORS 469.300(9)(a)(E)(ii) is not reasonable. Parallel pipes in the same right of way do not require double counting for purposes of determining council jurisdiction.

4. The council is not being asked to approve the newly developed underground storage area at the Calvin Creek site.

Excluded from the definition of "energy facilities" (ORS 469.300(9)) and "related or supporting facilities" (ORS 469.300(23)) are underground gas storage reservoirs. Thus, the new underground gas storage area to be served by the pipelines and surface facilities proposed for siting in the application for amendment, is not within the council's jurisdiction.

Local 290 argues that because the Calvin Creek Storage area is outside the site boundary of the existing facility, it does not come within the terms of the provisions in the site certificate that contemplate amendments to the site certificate. Because the new underground reservoir is not within the council's jurisdiction, it is not necessary to reach the question whether it would be sufficiently connected to the existing facility to be undertaken as an amendment to that facility's site certificate.

5. The pipelines connecting the new underground gas storage reservoir with Miller's Station are not proposed as an amendment to the South Mist Feeder Pipeline site certificate.

Local 290 argues that the pipelines proposed here is not correctly viewed as an amendment to the South Mist Feeder Pipeline. But NNG has not requested the council to approve the pipelines as an amendment to the South Mist Feeder Pipeline site certificate. NNG has requested that the council approve the pipelines as an amendment to the Mist Underground Storage Reservoir site certificate.

B. The process proposed for a decision on the application for amendment is sufficient under the site certificate and the U.S. Constitution.

1. The site certificate authorizes the process employed here.

The site certificate authorizes two different processes for two different types of amendments. One process covers the situation in which "unforeseen developments cause the construction or operation of the underground storage reservoir or related or supporting facilities to present a danger to the public health, safety or welfare or if Federal law requires a change * * *." In that circumstance, the site certificate authorizes either NNG or the council to "propose a corrective amendment." Site Certificate at 11.

The other process is for "amendments not affecting the public health, safety or welfare

and where ONG [NNG's predecessor] and EFSC agree that it is desirable to amend this site certification * * *." In that circumstance, NNG may file an application for amendment to the site certificate. The process employed here exceeds the process authorized for amendments under this provision.

Local 290 argues that the council is required to employ the process for the first type of amendment above, those involving developments that cause the facilities to present a danger to public health or safety. But that provision, read in its entirety, appears to apply to the situation in which some event or discovery suggests that the existing facility may not be safe, and that "corrective action" is needed. No "corrective action" has been proposed here, either by NNG or EFSC.

In contrast, the second amendment process authorized by the site certificate clearly contemplates the present situation -- a request by NNG to amend its site certificate to expand the facility. The council may evaluate this amendment request using the process authorized for amendments not affecting the public health, safety or welfare.

2. Due process has been provided.

Local 290 argues that Article I § 18 of the Oregon Constitution and the due process clause of the 14th amendment of the United States Constitution require that the council hold a contested case hearing. None of the authorities on which Local 290 relies support that assertion. Local 290 has been afforded notice of the application and a meaningful opportunity to be heard. Through its comments, Local 290 has taken advantage of that opportunity. In addition, Local 290 and the public generally may provide written comments on the draft proposed order, and may present oral comment to the council at its May 30 meeting, or during the 30 day comment period after issuance of the Office of Energy's proposed order. No more is required.

VI. Order and Conditions for the Site Certificate Amendment

We conclude that the Project complies with all Council standards and applicable requirements of other agencies, and amend the Site Certificate to permit construction and operation of the Project as described in this Order, which shall be incorporated into the Site Certificate. The Site Certificate shall be amended to include the following conditions:

A. General Conditions

- (1) NNG shall submit to the department a legal description of the Project site to be appended to the Site Certificate prior to construction.
- (2) The Project shall be designed, constructed, operated and retired:
 - (a) Substantially as described in the amended Site Certificate;
 - (b) In compliance with the requirements of ORS Chapter 469, applicable Council rules, and applicable state and local laws, rules and ordinances in effect at the time Amendment No 4 to the Site Certificate is issued; and
 - (c) In compliance with all applicable permit requirements of other state agencies.

- (3) Construction of the Project shall begin not later than the end of 1997 and be completed not later than November 30, 1998.
- (4) No construction, including clearing of a right of way, except for the initial survey, may commence on any part of the facility until the certificate holder has adequate control, or has the statutory authority to gain control, of the lands on which clearing or construction will occur.
- (5) NNG shall prevent any condition over which NNG has control from developing on the Project site that would preclude restoration of the site to a useful condition.
- (6) NNG shall restore vegetation to the extent practicable and shall landscape portions of the area disturbed by Project construction in a manner compatible with its surroundings and/or proposed future use. Upon completion of Project construction, NNG shall dispose of all temporary structures not required for future use and all timber, brush, refuse and flammable materials or combustible material resulting from the clearing of land or from construction of the facility.
- (7) NNG shall install a new turbine compressor, rated at a maximum of 5,035 BHP at 59 degrees F. NNG shall remove two existing 550 BHP units and operate the remaining two 1,350 BHP units so as to achieve a maximum compression BHP of 6,650.

B. Conditions related to EFSC Standards

Structural and Soils Standards

- (1) The pipeline corridor shall be substantially as shown on Figure G-1 of Exhibit 10 of the Application for Amendment. Significant changes in pipeline corridor shall require prior Council approval.
- (2) NNG shall construct modifications to Miller Station substantially in accordance with the recommendations in Exhibit 11, Section 7 of the Application for Amendment. In the vicinity of the new compressor building, the adjacent equipment, in the dehydration area and in areas where there will be heavy loads and traffic, all fill will be classed as "structural fill." This fill will utilize imported soil and will be compacted as specified in Section 7.1.3 of Exhibit 11 of the Application for Amendment. For trench backfill in unimproved areas (no surface traffic), the backfill above pipe will consist of removed soil placed with nominal compaction, as specified in Section 7.1.3 of Exhibit 11 of the Application for Amendment.
- (3) NNG shall design and construct pipelines substantially in accordance with the recommendations in Section 8 of Exhibit 11 of the Application for Amendment.

Fish and Wildlife Habitat

- (4) NNG shall utilize directional drilling for the pipeline installation at the Nehalem River. Drilling shall begin at points no closer than 300 feet from the river bank and shall place the pipeline at least 20 feet below the river bed.
- (5) NNG shall minimize impacts for the Category 2 wetland north of highway 202 by taking steps including but not limited to:

- (a) using a single trench for dual pipelines and keeping the installation as narrow as possible while remaining consistent with safety and practical installation requirements.
 - (b) timing construction for the dry time of year, not to extend beyond November 15.
 - (c) separating and returning topsoil to the trench backfill surface for pipelines and installing clay barriers at each end of the wetland crossing.
 - (d) avoiding the rest of the wetland during construction by use of the existing road through the wetland for construction equipment.
- (6) NNG shall restore habitat in the Category 2 wetland to the north of highway 202 to preconstruction conditions within two growing seasons.
- (7) NNG shall minimize the loss of habitat in forested areas and clear cuts by allowing vegetation to grow back in the construction corridor except for the 40 foot area directly over the pipeline. NNG shall restore surface vegetation in farmed areas.
- (8) NNG shall time the crossing of any small tributaries or creeks during the dry period, and shall restore the stream bed and stream banks before the rainy season, not to extend beyond November 15, 1997.
- (9) NNG shall minimize impact to wetlands by separating the upper foot of topsoil from the rest of the trench spoils and replacing it on the top of the trench.
- (10) NNG shall filter any water pumped from the trench during construction to remove sediments before it is returned to the wetland.
- (11) NNG shall complete pipeline construction through the wetland by November 15, 1997.

Historic, Archeological and Cultural

(12) A qualified archeologist shall monitor all grading and excavation activities associated with boring operations. If any artifacts or other cultural materials that might qualify as "archeological objects" as defined at ORS 358.905(1)(c) are identified, ground disturbing activities will cease until the archeologist can evaluate their potential significance. If the material is likely to be eligible for listing on the National Register of Historic Places or to qualify as archeological objects or sites, as defined at ORS 358.905(1)(c), NNG shall consult with the State Historic Preservation Office ("SHPO") and will comply with the archeological permit requirement administered by the SHPO as set forth in OAR 736 Division 51.

Socio Economic Impact

(13) NNG shall provide the Mist Birkenfield Rural Fire Protection District with an annual tour of the Miller Station to familiarize personnel with the facility in case of an emergency.

Waste Minimization

(14) NNG shall transport construction waste materials to an appropriate recycling facility or to an approved sanitary landfill for nonrecyclable goods. NNG shall collect scrap steel and welding rod for transportation to a recycling facility. Silt fence and straw bales shall be transported to an approved landfill.

(15) Nonhazardous wastes associated with the Project such as crankcase oil, triethylene glycol and oil/water separator oils shall be collected, transported and recycled by a vendor as bunker fuel. Oily rags and oil filters shall be incinerated off site by a permitted disposal facility. Granular activated carbon will be collected and sent to a permitted facility for regeneration. NNG may use alternate methods of disposal if approved by the Office of Energy.

(16) Water used for pressure testing shall be disposed of in a manner consistent with approved permits.

Retirement

(17) Prior to termination of the Site Certificate, NNG shall retire the Project site sufficiently to restore it to a useful condition. Site restoration shall include, but not be limited to, steps to:

- (a) Remove any hazardous material stored in buildings or located in process equipment and dispose of them following applicable state hazardous materials statutes and rules,
- (b) Disassemble the buildings and steel structures, break up the concrete slabs, and dispose of these materials either as scrap or at an appropriate landfill,
- (c) Remove above ground portions of all gathering lines and pipelines,
- (d) If necessary, revegetate the area, including pipeline right of ways, to prevent erosion and encourage habitat development,
- (e) Inspect all pipelines and remove any hazardous materials found, and dispose of hazardous materials generated from cleaning the pipelines in accordance with applicable state hazardous materials statutes and rules.

C. Conditions Related to Public Health and Safety Standards at OAR 345 Division 24

Under ORS 469.401(2), EFSC must impose conditions in the site certificate for the protection of public health and safety. Throughout this order are conditions related to other decisional criteria that are ultimately intended to protect public health and safety. The following conditions protect public health and safety specifically with regard to EFSC standards for surface facilities related to underground natural gas storage and natural gas pipelines.

(1) NNG shall design, construct, operate and retire the Project in accordance with applicable statutes, rules and ordinances.

(2) NNG shall construct all pipelines in accordance with the requirements of the U.S. Department of Transportation as set forth in Title 49, Code of Federal Regulations Part 192.

(3) Isolation valves shall be located at both ends of the 16 inch gathering lines terminating at Miller Station and at both ends of the eight inch and six inch gathering lines connecting the well sites with the sixteen inch line.


(4) NNG shall maintain a program to monitor the proposed pipeline to ensure protection of the public health and safety, including but not limited to:

- (a) Pressure sensing devices positioned at Miller Station and near the wellheads to relay critical information to both Miller station and Portland gas control centers,
 - (b) high and low pressure alarms monitored on a 24 hour per day basis to detect and locate areas where pressure variations may indicate abnormal conditions, and
 - (c) emergency response personnel on duty 24 hours per day, at Miller Station or in Portland, trained to respond to situations that require immediate attention.
- (5) Within two months of initial startup of the new compressor, NNG shall conduct noise surveys at the two locations previously tested on February 20 and 21, 1997 to demonstrate compliance with DEQ Noise regulations at OAR 340-35-035. Sound measurements shall be made with all compressors running at within 5% of horsepower permitted by this Site Certificate. Measurements shall be made at each location during atmospheric conditions best for sound propagation. Sound monitoring shall not be conducted when winds are in excess of 5 mph.

D. Additional Conditions for DSL Removal Fill Permit

- (1) Turbidity shall not exceed 10% above natural stream turbidities as a result of the project except that the Department of Environmental Quality allows that the 10% limit may be exceeded for a limited duration, provided all practicable erosion control measures have been implemented, including but not limited to:
- a. use of filter bags, sediment fences, catch basins or other means to prevent off site movement of soil
 - b. use of impervious covers for stockpiles left unattended or during a rain event,
 - c. waste materials and spoils shall be placed on uplands, such that the material cannot reenter a waterway or wetland, and
 - d. all areas of soil disturbance shall be seeded or otherwise revegetated with native species upon completion of construction to prevent subsequent erosion.

7/21/97
Date



Terry Edvalson, Chair
Energy Facility Siting Council