

ORDER APPROVING AMENDMENT No. 6

to

**SITE CERTIFICATE for NORTHWEST NATURAL GAS
MIST UNDERGROUND GAS STORAGE FACILITY**

TABLE OF CONTENTS

I.	Introduction and Background	1
II.	Description of the Application for Amendment	1
	A. Description of the Facility.....	1
	B. Description of the Proposed Amendment	2
III.	Amendment Process and Procedural History.....	3
	A. Amendment Process.....	3
	B. Procedural History.....	3
IV.	Findings and Conclusions	4
	A. Compliance with EFSC Standards in OAR 345 Division 22	4
	1. OAR 345-22-010 Organizational, Managerial and Technical Expertise	4
	2. OAR 345-22-020 Structural Standard	5
	3. 345-22-022 Soil Protection.....	7
	4. 345-22-030 Land Use	8
	5. 345-22-040 Protected Areas.....	20
	6. 345-22-050 Financial Assurance	21
	7. 345-22-060 Fish and Wildlife Habitat	21
	8. 345-22-070 Threatened and Endangered Species	23
	9. 345-22-080 Scenic and Aesthetic Values	24
	10. 345-22-090 Historic, Cultural and Archaeological Resources	24
	11. 345-22-100 Recreation.....	25
	12. 345-22-110 Socio-Economic Impacts.....	26
	13. 345-22-120 Waste Minimization	28
	14. 345-22-130 Retirement	29
	B. EFSC Public Health and Safety Standards in OAR 345 Division 24	30
	1. OAR 345-24-030 Public Health and Safety.....	30
	2. OAR 345-24-060 Public Health and Safety Standards for Pipelines.....	31
	C. Requirements of Other Agencies	33
V.	Issues Raised in Public Comment.....	33
VI.	Order and Conditions for the Site Certificate Amendment	33
	A. General Conditions under OAR 345 Division 27	33
	B. Conditions related to EFSC Standards	35

**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. 6 to its)	ORDER APPROVING
Site Certificate for the Mist Underground)	AMENDMENT No. 6
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 ("NWN").

The Site Certificate has been amended five 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 NWN to replace some injection/withdrawal wells. In 1990 ONG assigned the site certificate to its parent company, NWN.

Amendment #4, which EFSC approved in July 1997, allowed expansion of the site boundary to include the Calvin Creek storage area, 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 NWN's Miller Station.

Amendment #5, which EFSC approved in March 1998, made the current EFSC rules at OAR 345-027-0050 through 0080 applicable to the facility. These rules govern the process for site certificate amendments.

This order addresses NWN request for Amendment #6, which NWN submitted on September 15, 1998. This amendment would allow further storage development in the Calvin Creek area, on land already within the site as enlarged by amendment #4.

II. Description of the Application for Amendment

A. Description of the Facility

The Mist underground storage facility provides NWN 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. NWN 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 facility includes related and supporting surface facilities. Most of these are located at NWN's Miller Station, which includes compressors, piping, control, dehydration and auxiliary systems. Other surface facilities related to the underground gas storage include gathering lines and facilities for NWN maintenance and operations staff.

The site for the Mist underground storage facility consists of Bruer/Flora and the Calvin Creek area. Bruer/Flora is located north of the Nehalem River, near Miller station. It was originally permitted in 1981. The Calvin Creek area is located two and one-half miles south of Miller Station, and was permitted in Amendment #4 in 1997. Twin 16-inch pipelines cross the Nehalem River and connect the Calvin Creek area with Miller Station.

B. Description of the Proposed Amendment

NWN proposes to add new storage within the Calvin Creek area, on land already included in the site certificate. Specifically, NWN proposes to develop an area within the Calvin Creek area called the Reichhold Pool. The new storage requires increased compression at Miller Station. In 1997 NWN installed a natural gas fired, turbine driven centrifugal compressor rated at 5500 BHP. Two additional compressors, each rated at 1,350 BHP, are in continued use from the original site certificate. Although the total available compression is 8,200 BHP, the site certificate is now conditioned such that the total compression used shall not exceed 6,650 BHP. EFSC imposed this condition to ensure that the added storage capacity would not require more than 4,000 BHP and thereby match the definition of a jurisdictional facility. The current proposal would not require NWN to install new compression, but it would remove the 1997 restriction and allow NWN to operate all compressors at rated capacity.

The new storage pool will add 45 million cubic feet per day (MMcfd) to the throughput at Miller station. In addition to the increased need for compression, NNW proposes to increase gas dehydration and metering capacity.

The existing 16-inch pipelines that connect Calvin Creek to Miller Station are large enough to serve the proposed expansion. NWN does not propose to install any new lines across the Nehalem River. However, the development of new reservoirs in the Calvin Creek area will require one new 12 inch line gathering line plus 6 and 8 inch feeder lines.

The proposed storage expansion in this amendment would require increased transmission capacity. In a separate request, NWN has proposed to expand the capacity of the South Mist Feeder pipeline, which connects the Mist storage facility to the rest of NWN's gas transmission

system. The South Mist Feeder pipeline is the subject of a separate site certificate and is outside the scope of this proposed order.

NWN has adopted new nomenclature for the phases of its gas storage operation at Mist. NWN refers to the original pools permitted in 1981 as "phase 1." The development of storage pools in the Calvin Creek area permitted in 1997 is called "phase 2." The development proposed in this Application, including the development of the Reichhold Pool, is entitled "phase 3." Collectively NWN refers to the Reichhold Pool development and the South Mist Feeder pipeline expansion collectively as "the Project." In this order, we refer to NWN's proposed changes to the existing underground gas storage operation using nomenclature consistent with NWN's.

III. Amendment Process and Procedural History

A. Amendment Process

The Council's amendment rules, OAR Chapter 345, Division 27 apply to this request for amendment, in accordance with Amendment #5. EFSC will apply its current standards to this amendment request. EFSC must find compliance with all permitting requirements of other state agencies, other than permits delegated to another agency by the federal government.¹

B. Procedural History

NWN submitted its Application on September 15, 1998.

Public Notice

On September 16, 1998 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 four locations: the Mist General Store, the Columbia County Courthouse, the Washington County Courthouse, and the OOE office in Salem.

The notice stated that comments from the public were invited, and stated that the deadline for public comment was October 12, 1998. OOE received comments from property owners along the route of the proposed South Mist Feeder Pipeline, but none concerning the expansion of the underground gas storage facility.

Notice to State Agencies and Affected Local Governments

On September 16, 1998 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.

Public Meeting Held by NWN

1. In its Order Approving Amendment #4 to the Site Certificate for the Mist Underground Natural Gas Storage, EFSC determined that its jurisdiction over permits of other state agencies extends to site certificate amendments.

On October 8, 1998, NWN held an information meeting at the Natal Grange, near Mist, Oregon. Members of NWN 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 NWN, not by OOE. Approximately 50 persons (excluding NWN staff) attended.²

Public Meeting Held by EFSC

On December 11, 1998, the Council reviewed OOE's preliminary conclusions at a public meeting in Salem OR.

Proposed Order and Public Comment Period

On January 19, 1999 OOE issued a Proposed Order approving the amendment. 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, including any request for contested case, must be submitted by the close of business on February 19, 1999. Although there were many concerns regarding the South Mist Feeder Pipeline, no members of the public commented on the Proposed Order for the amendment request to the site certificate for the underground storage facility, nor was there any request for contested case.

Council Decision

On February 25, 1999 the Council considered the Proposed Order at a meeting in Hillsboro OR. Although there were many concerns regarding the South Mist Feeder Pipeline, there were no comments from either the public or the applicant regarding the storage facility. The Council approved the amendment request as recommended.

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) if this standard states that:

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2. NWN held a second meeting in Washington County, regarding its South Mist Feeder Pipeline amendment.

"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: NWN is a 140 year old company whose core business is the local distribution of natural gas. NWN or its former subsidiary ONG have operated the Mist underground storage facility since 1988. The requested amendment would not allow NWN to construct a new type of facility, but would allow expansion of facilities that are already operating. The company personnel who have been managing the existing storage facility will continue to operate the expanded facility. The individuals responsible for the design and construction of the expanded facility are the same individuals responsible for the Calvin Creek project in 1997. Inspections by OOE staff indicate that NWN complied with site certificate conditions in implementing the Calvin Creek project.

The record reveals no regulatory citations. NWN states that it has received no notices of violation for occupational safety or any regulatory citations from DOGAMI in connection with its underground storage. Written comments by Oregon Public Utilities Commission ("OPUC"), indicate that NWN complies with construction regulations for gas pipelines as required by Title 49 Part 192 of the Code of Federal Regulations.³

NWN has identified, and we are aware of, no third party permits. Gathering line construction was completed in 1998. Because the pipelines constructed in 1998 were used "for testing or reservoir maintenance purposes," they did not require prior EFSC approval. ORS 469.300(9)(a)(H). No further permits of other agencies are needed. Therefore sections (2) and (3) of this standard do not apply.

Conclusion: NWN's prior experience constructing and operating the Mist Storage Facility, its successful completion of the Calvin Creek expansion in 1997, and the fact that the proposed expansion would involve identical activities, provide reasonable assurance that NWN can successfully construct, operate and retire the facility. No new conditions are required.

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

³ See Application , Exhibits 17 and 18

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. NWN retained a consultant, GeoEngineers, Inc. to prepare a geotechnical investigation of the site. The Application summarizes GeoEngineers' report and provides the entire report as Exhibit 14 in the Application.

Site Characterization: The NWN proposal includes development of new storage in the Calvin Creek area and associated improvements to Miller Station. For the Miller Station improvements, NWN has relied on EFSC's finding of compliance with the structural standard for Amendment #4 in 1997. NWN has pointed out that the Miller Station improvements associated with this amendment do not change any of the conclusions reached in the site characterization for Amendment #4.

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. NWN 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, NWN 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.

NWN 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. NWN 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, NWN considered quakes from random crustal events, based on the seismic history of the area (given in Application Exhibit 14). NWN 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.

GeoEngineers performed a site specific investigation of ground response from these postulated events, calculating horizontal peak ground accelerations using attenuation relations based on ground motion recordings at the ground surface of stiff soil site similar to the Reichhold Gas Pool site. The expected surface ground motion levels were less than the Uniform Building Code Zone Factor of 0.3 g. GeoEngineers used the maximum credible seismic event rather than the lesser "reasonably probable" event, and the resultant ground accelerations were within design criteria for Uniform Building Code Seismic Zone 3.

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

Design and Construction Requirement: GeoEngineers considered the potential for mass

movement, differential soil compaction and settlement, and liquefaction. They concluded that the risk of these hazards was low because the slopes traversed by the proposed pipelines are generally shallow and are comprised of stiff, cohesive soils.

GeoEngineers also considered the risk of surface fault rupture. They concluded that there is a very low risk of surface fault rupture because of the lack of recent surface faulting and the lack of small earthquakes in the recent historical record.

Based on GeoEngineers' investigation, NWN has concluded, and we concur, that the risk of seismic hazards as defined in this standard is low. In minimizing the risk, NWN has used similar techniques to those used in 1997, particularly in selecting the pipeline route. NWN has routed the gathering lines on ridge tops or vertically up the hillside, rather than traversing on side hills. This minimizes the stress on the pipe in the unlikely event of a landslide. Further, NWN has cited a study of welded steel pipelines in California that indicates that the planned pipeline is not vulnerable to the expected levels of seismic ground shaking.

Conclusion: The Council reviewed the Application and Exhibits in consultation with DOGAMI. In commenting on the Application's technical adequacy, DOGAMI wrote⁴:

"DOGAMI finds the methodology used by the applicant to be acceptable and is in agreement with the conclusions regarding seismicity and geologic hazards. In conclusion, the Northwest Natural Application to Amend the Site Certificates for the Mist Underground Gas Storage Project and the Mist South Feeder Pipeline has been reviewed and found to be complete and adequate regarding geological and seismic hazards. The Application contains reports, which represent a high level of rigor by the applicant to consider these hazards."

The Council finds that NWN has adequately characterized the site in terms of seismic zone and expected ground response during maximum credible seismic events, and can design and construct the facility to avoid potential dangers presented by seismic hazards affecting the site.

3. 345-22-022 Soil Protection

Under this standard the Council must find that:

"the design, construction and operation of the facility, taking into account mitigation, is not likely to result in a significant adverse impact to soils."

Discussion: The Application includes a soils investigation and report (Application, Exhibit 14) provided by NWN's consultant, GeoEngineers. The Exhibit identifies five 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.

For the Miller Station improvements, NWN has relied on EFSC findings of compliance with this standard for Amendment #4 to the site certificate, which EFSC approved in 1997. In its final order approving Amendment #4, EFSC stated that:

⁴ DOGAMI letter from Dan Werneil to Adam Bless "Comments Re: Northwest Natural Application to Amend the Site Certificates for Mist Underground Natural Gas Storage and the South Mist Feeder Pipeline" October 6, 1998

“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. NWN 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.”

The additional gas dehydration and metering facilities associated with this amendment will not involve significant earthwork. The planned equipment locations are already covered with crushed rock. Therefore NWN has concluded, and we concur, that there will be no significant new adverse impact on soils at the Miller station site.

Impacts associated with developing the Reichhold Pool would be from construction. NWN states that the graded well sites will affect less than four total acres and will be designed to minimize erosion during storage operations.

NWN has considered the impacts due to soil compaction, erosion, ground water, mass wasting, slumping, and sliding. Their consultant, GeoEngineers, recommends using graded water bars to control water erosion along the pipeline alignment. GeoEngineers recommend that NWN install water breaks along the pipeline and provide outlet pipes in very wet areas and areas affected by springs. After pipeline burial, plant growth will be established to prevent erosion. NWN has committed to using native soils for backfill and will surround the pipeline with bedding sand as necessary.

Conclusion: The NWN commitments identified above, and the construction recommendations of GeoEngineers, (Application Exhibit 14 Sections 5.2 and 5.3) shall be added as conditions to the Site Certificate. With these conditions, the Council finds that the design, construction and operation of the proposed expansion are not likely to result in significant adverse 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. NWN has elected to address this standard by obtaining a land use determination from the Council pursuant to ORS 469.504(1)(b).

Discussion: The NWN Application describes the development of the Reichhold Pool and minor upgrades to equipment at Miller Station, both of which are in Columbia County on land in the PF-76 (Primary Forest) zone. On February 10, 1997, the Columbia County Planning Commission issued conditional use permit CU 53-96, permitting NWN to replace two 550 hp compressors at Miller Station with one 3950 hp compressor in a new metal building, with related

machinery. On March 5, 1997, the Columbia County Planning Commission issued conditional use permit CU 2-97, permitting up to 16 gas wells on 4 well sites in the Calvin Creek Gas Field in the PA-38 and PF-76 zones. NWN now proposes to develop storage capacity on 4 additional well sites in the Calvin Creek area, all on land previously approved in Columbia County's 1997 permits. The wells are under DOGAMI jurisdiction and are under direct Columbia County jurisdiction for land use purposes.

In the PF-76 zone, section 503, 504 and 1503 of the Columbia County Zoning Ordinance (CCZO) apply. However, in 1994 the Department of Land Conservation and Development (DLCD) amended its rules at OAR 330 Divisions 6 and 33 for farm and forest zones. Columbia County has not implemented these amendments. Therefore, under ORS 197.646(3), the DLCD rules apply directly to the NWN project in farm and forest zones. In this order, we have analyzed the NWN project for compliance with both the applicable substantive criteria from the county zoning ordinance, and the applicable DLCD rules.

CCZO Section 503

CCZO §503 states that:

"In the PF zone the following conditional uses and their accessory uses are permitted subject to the provisions of Section 504 and 505. A conditional use shall be reviewed according to the procedures provide in Section 1503.

.2 Operations conducted for the exploration, mining, and processing of...mineral or subsurface resources not permitted outright.

The project is for processing of natural gas, a subsurface resource. Therefore the project may be permitted as a conditional use.

CCZO Section 504

The specific criteria for this zone are set forth in CCZO 504.1 through 504.6, which require the following:

§504.1 "The use is consistent with forest and farm uses and with the intent and purposes set forth in the Oregon Forest Practices Act."

The proposed use is consistent with forest and farm uses and will not unduly interfere with or detract from those uses. Most of the proposed Project will be located underground and any disturbance of timberlands and timber management activities has been minimized. One of the largest timber owners in the area, Longview Fibre, has submitted a letter explaining that gas storage operations are "very compatible" with timber management and stating that Longview Fibre has "no objection to the current proposed expansion."

The Oregon Forest Practices Act (ORS Chapter 527) includes the following:

"527.630 Policy (1)...it is declared to be the public policy of the State of Oregon to encourage economically efficient forest practices that assure the continuous growing and harvesting of forest tree species and the maintenance of forest land for such purposes as the leading use on privately owned land, consistent with sound management of soil, air, water, fish and wildlife resources and scenic resource within visually sensitive corridors

as provided in ORS 527.755 that assures the continuous benefits of those resources for future generations of Oregonians.”

The proposed project does not interfere with this objective because it will not prevent the forest lands in the area from being used principally for forest management. The well sites and pipeline routes have been designed to minimize the impact on existing timberland. The construction and operation of the Project will be coordinated with forestry operations in the area, and the largest timber owner has submitted a letter of support. Therefore, the project meets the criterion in CCZO 504.1.

§504.2 “The use will not significantly increase the cost, nor interfere with accepted forest management practices or farm uses on adjacent or nearby lands devoted to forest or farm use.”

Many of our findings regarding CCZO 504.1 apply here as well. The impact of this project on nearby forestry and farm operations will be minimal. The project will occur subject to lease and easement agreements requiring NWN to conduct its activities with due regard for farm and forest practices. As most of the project, including the gathering and feeder pipelines, will be underground, the impact on nearby properties will be minimal. The Reichhold Pool development will not impact any farmland. NWN has submitted a letter from Longview Fibre stating that the existing NWN facilities have had minimal impact on their operations.

In CU 2-97, the Columbia County Planning Commission found that the proposed use will not interfere with farm or forest uses on adjacent lands if appropriate measures are taken to prevent fire from spreading to adjacent forests. NWN has submitted a letter from the Mist-Birkenfeld Fire Protection District in support of the proposed project. Therefore, the project meets the criterion in CCZO 504.2.

§504.3 “The use shall be limited to a site no larger than necessary to accommodate the activity and, as such will not materially alter the stability of the overall land use pattern of the area or substantially limit or impair the permitted uses of surrounding properties. If necessary, measures will be taken to minimize potential negative effects on adjacent forest lands.”

NWN has determined the portion of the project associated with the Reichhold Pool development to be the minimum area necessary to cover the underground storage formation. NWN has located well sites and gathering and feeder pipeline alignments to minimize the impact on timberlands. The pipeline construction and rights-of-way are the minimum widths necessary to safely accomplish their functions. The well sites and buried pipelines will not have any negative effects on adjacent timberlands. The equipment upgrades at Miller Station do not increase the land involved. Therefore, the project meets the criterion in CCZO 504.3.

§504.4 “The use does not constitute an unnecessary fire hazard, and provides for fire safety measures in planning, design, construction, and operation.”

NWN has operated the Bruer/Flora natural gas storage reservoirs since 1988 without causing any fires or other hazards. The wellhead and pipeline facilities have numerous safety features, including relief valves and automatic shutdown systems. In addition, trained NWN personnel

monitor the facilities from Miller Station. NWN has submitted a letter from OPUC, stating that NWN was found to be in compliance with pipeline safety regulations of the U.S. Department of Transportation (49 CFR 192). NWN has also submitted a letter from the Mist-Birkenfeld Rural Fire District supporting the project. Therefore the criterion of CCZO 504.4 is met.

§504.5 "Public utilities are to develop or utilize rights-of-way that have the least adverse impact on forest resources. Existing rights-of-way are to be utilized whenever possible."

The equipment upgrades at Miller Station will not involve any rights-of-way. For the development of Reichhold Pool, NWN has utilized existing logging roads when possible. Where use of logging roads was not feasible, NWN has selected pipeline rights-of-way to minimize the cutting of mature timber. Therefore the project meets the criterion of CCZO 504.5.

§504.6 "Development within major and peripheral big game ranges shall be sited to minimize the impact on big game habitat. To minimize the impact, structures shall: be located near existing roads; be as close as possible to existing structures on adjoining lots; and be clustered where several structures are proposed."

This area is within a major big game habitat area. Columbia County found in CU-2-97 that the NWN storage operations in the Mist Field area will not unduly impact big game habitat. NWN does not propose any above ground "structures," as the term is used in CCZO §504.6, other than wellhead facilities. The upgrades to equipment at Miller Station will have no new impacts. NWN has selected the pipeline routes to minimize the cutting of mature timber, which can serve as cover for big game. The project meets the criterion of CCZO 504.6

CCZO Section 1503

This section contains the general criteria for conditional uses. CCZO § 1503.5 states that:

"The Commission may grant a Conditional Use Permit after conducting a public hearing, provided the applicant provides evidence substantiating that all the requirements of this ordinance relative to the proposed use are satisfied and demonstrates the proposed use also satisfies the following criteria:

(a) CCZO § 1503.5(A): *"The use is listed as a Conditional Use in the zone which is currently applied to the site."*

This criterion is met for the PF-76 zone because CCZO § 503.2 lists "mining and processing of ...mineral or subsurface resources not permitted outright" under conditional uses

(b) CCZO § 1503.5(B): *"The use meets the specific criteria established in the underlying zone."*

This criterion is met for the PF-76 zone, as shown by the above discussion of CCZO §504.

(c) CCZO § 1503.5(C): *"The characteristics of the site are suitable for the proposed use considering the size, shape, location, topography, existence of improvements, and natural features."*

The choice of a site for the gas storage reservoir was dictated by the presence of a unique underground formation suitable for natural gas storage. Based on studies performed by Dames &

Moore and GeoEngineers, NWN has selected pipeline routes designed to minimize intrusion on natural features such as wetlands, hazard areas such as unstable slopes, and natural resources such as timber.

(d) CCZO § 1503.5(D) *“The site and proposed development is timely, considering the adequacy of transportation systems, public facilities, and services existing or planned for the area affected by the use.”*

In its 1997 Staff Report for CU 2-97, the Columbia County Planning Commission noted that the only transportation systems in the area are South Mainline Road, owned by Longview Fibre and used mostly for log trucking, other logging roads, and State highway 202. Public utilities are electric power and telephone. No additional facilities will be required by the new wells and pipelines or by the equipment upgrades at Miller Station. The development is timely because existing public services and facilities are adequate to meet project needs.

(e) CCZO § 1503.5(E) *“The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs, or precludes the use of surrounding properties for the primary uses listed in the underlying district.”*

The surrounding area is in timber production. The proposed use will not impair or preclude the use of surrounding properties for this primary use because it will not affect other property owners' abilities to use their property. The existing gas storage activities are carried out without conflicts with on-site or nearby timber owners. NWN has submitted letters of support from nearby timber and farm owners. Equipment upgrades at Miller Station will have no impact on timber activities nearby. The development of Reichhold Pool and associated gathering lines will have negligible impacts on surrounding forestry operations as the existing gathering lines.

(f) CCZO § 1503.5(F) *“The proposal satisfies the goals and policies of the Comprehensive Plan which apply to the proposed use.”*

In its 1997 conditional use permits CU 2-97 and CU 53-96, Columbia County considered only one goal and policy from the county's comprehensive plan, the Energy Sources goal. The Energy Sources goal is “To protect deposits of energy materials in the County and prevent injury to surrounding lands and residents.” The comprehensive plan finds that:

“Potential conflicting uses for natural gas wells in the County are minimized by the controls and regulations imposed by ODOGAMI (Oregon Department of Geology and Mineral Industries). They are also minimized since wells are located in remote forested areas and surrounding property owners share in the profits of producing wells. The county will conserve forest lands for forest uses and allow operations conducted for the exploration, mining, and processing of subsurface resources as a conditional use. The County will rely on DOGAMI to insure future protection of resources and surrounding lands.”

The county found that the development of the Calvin Creek Storage Area and associated improvements at Miller Station met this goal because of the DOGAMI regulations. Miller Station and related facilities have been approved by the County as a way to prolong the useful

life of the gas fields. The proposed development of Reichhold Pool and associated equipment upgrades at Miller Station meet this goal for the same reasons.

The Forest Lands goal and policy also apply to the proposed development. The Forest Lands Goal is: "To conserve forest lands for forest uses." Forest Lands Policy 1 states that: "*It shall be the policy of Columbia County to conserve forest lands for forest uses...*"

Most of the project will be located underground and will have minimal impact on forest lands. NWN has sought to minimize the forest impacts of its above ground activities. Activities at Miller Station will involve no new forest land. NWN has submitted a letter from Longview Fibre stating that "the exploration, production and underground storage of natural gas has proven to be a very compatible land use with our forest management operations." Therefore the proposed Reichhold Pool development and associated upgrades at Miller Station satisfy this goal and policy.

(g) CCZO § 1503.5(G): "*The proposal will not create any hazardous conditions.*"

In CU 2-97, Columbia County found that the proposed new wells and pipelines should be no more hazardous than the existing facilities in the Mist gas field and Miller Station. NWN has taken suitable precautions to detect and control fire and to prevent its spread to surrounding forest lands. These findings apply as well to the proposed Reichhold Pool development and associated upgrades at Miller Station. NWN has considered a number of safety issues including soil stability and seismic issues in accordance with EFSC's structural and soil standards. Further, NWN has submitted a letter from Mist Birkenfeld Rural Fire district, supporting the project. Therefore the project satisfies this goal and policy.

(h) CCZO § 1503.6: "*The Commission may require the Conditional Use be subject to a site design review by the Design Review Board or Planning Commission.*"

A design review is required for new facilities. Design review requirements are set forth in CCZO § 1550, which requires that the applicant submit a site plan and analysis, including maps, grading plans, architectural drawings, landscaping plans, and other detailed information. NWN submitted all required information in Exhibits 10, 12, 13, 14, 15-B, 15, 16, 19, 22, 31, and 33 of the Application. The ordinance does not contain substantive criteria. Therefore by submitting the required information NWN meets this ordinance.⁵

State regulations directly applicable to the facility - Forest Zones.

In 1994, the Land Use and Development Commission (LCDC) adopted new land use rules at OAR 660. In particular, LCDC amended the planning goals for farm and forest zones, as set forth in Divisions 6 and 33. Columbia County's acknowledged comprehensive plan does not implement the 1994 revision to the LCDC rules. Therefore, under ORS 197.646(3), the amended LCDC rules are directly applicable to the local government's land use decisions.

⁵ On November 25, 1998 Columbia County amended CCZO 1550. ORS 469.401 generally requires compliance with local ordinances, state laws and rules in effect on the date the site certificate is executed. However, land use compliance is addressed specifically at ORS 469.503(2)(b)(A), which states that the applicable land use ordinance is the one in effect on the date of submittal.

EFSC rule OAR 345-022-030(2)(b)(B) requires a finding that:

“The facility complies with any Land Conservation and Development Commission administrative rules and goals and any land use statutes directly applicable to the facility under ORS 197.646(3)”

The directly applicable LCDC rules are as follows:

1. 660-006-0025(1)

“Uses Authorized in Forest Zones

(1) Goal 4 requires that forest land be conserved. Forest lands are conserved by adopting and applying comprehensive plan provisions and zoning regulations consistent with the goals and this rule. In addition to forest practices and operations and uses auxiliary to forest practices, as set forth in ORS 527.722, the Commission has determined that five general types of uses, as set forth in the goal, may be allowed in the forest environment, subject to the standards in the goal and in this rule. These general types of uses are:

** * * **

(c) Locationally dependent uses, such as communication towers, mineral and aggregate resources, etc.”

The proposed expansion is a use related to the mineral development project at Mist Field, and is locationally dependent in that it can only be sited where unique geological conditions exist. It is the kind of non-forest use contemplated in the rule.

2. OAR 660-006-0025(3)

*“(3) The following uses may be allowed outright on forest lands:
(m) Exploration for and production of geothermal, gas, oil, and other associated hydrocarbons, including the placement and operation of compressors, separators and other customary production equipment for an individual well adjacent to the well head;”*

The Mist Storage Facility fits the above description. Compliance with subsection (4) is necessary and is shown below.

3. OAR 660-006-0025(4)

“(4) The following uses may be allowed on forest lands subject to the review standards in section (5) of this rule:

(p) New electric transmission lines with right of way widths of up to 100 feet as specified in ORS 772.210. New distribution lines (e.g., gas, oil, geothermal, telephone, fiber optic cable) with rights-of-way 50 feet or less in width;”

Gathering lines associated with the proposed development will have a permanent right-of-way of 50 feet or less, and therefore may be allowed on forest lands subject to compliance with subsection (5) of the rule, which is shown below.

4. OAR 660-006-0025(5)

“ A use authorized by section (4) of this rule may be allowed provided the following requirements or their equivalent are met. These requirements are designed to make the use compatible with forest operations and agriculture and to conserve values found on forest lands:

(a) The proposed use will not force a significant change in, or significantly increase the cost of, accepted farming or forest practices on agriculture or forest lands;”

The proposed expansion will not affect farm uses because the Reichhold Pool and Miller Station are on forest lands. The proposed use is consistent with forest uses and will not unduly interfere with or detract from those uses. The gathering lines will be located underground, except for isolation valves required by federal safety regulations, and any disturbance of timberlands and timber management activities has been minimized. One of the largest timber owners in the area, Longview Fibre, has submitted a letter explaining that gas storage operations are “very compatible” with timber management and stating that Longview Fibre has “no objection to the current proposed expansion.”

The impact of this Project on nearby forestry and farm operations will be minimal. The Project will occur subject to lease and easement agreements requiring the applicant to conduct its activities with due regard for farm and forest practices. As most of the Project, including the pipelines, will be underground, impacts on nearby properties will be minimal. The letters from Longview Fibre demonstrate that the existing gas storage pools and gathering lines have not had an adverse impact on forestry operations, or increased the cost of those operations. (Exhibits 24, 25.)

“(b) The proposed use will not significantly increase fire hazard or significantly increase fire suppression costs or significantly increase risks to fire suppression personnel; and”

The use will not result in an increased potential for fire on farm or forest lands. The applicant has operated the Calvin Creek and Bruer/Flora underground natural gas storage reservoirs

since 1988 without causing any fires or other hazards. The wellhead and pipeline facilities have numerous safety features, including relief valves and automatic shutdown systems. In addition, the facilities are monitored from the “nerve center” at Miller Station by the applicant’s trained personnel. Miller Station has been operated since 1987 (17,800 person-hours) with only a single lost-time accident. (*Id.*) It was inspected by the OPUC in 1996 and was found to be in compliance with the pipeline safety regulations of the U.S. Department of Transportation (49 CFR part 192). (Application, Exhibit 17.)

“(c) A written statement recorded with the deed or written contract with the county or its equivalent is obtained from the land owner which recognizes the rights of adjacent and nearby land owners to conduct forest operations consistent with the Forest Practices Act and Rules for uses authorized in subsections (4)(e), (l), (r), (s) and (v) of this rule.”

The Reichhold pool development and associated gathering lines will be constructed on private land under easements between NWN and the property owners. These leases recognize the property owners’ rights to continue farm and forest activities on the same tract (and by implication, on adjacent lands), and prevent NWN from interfering with such rights. Columbia County found in 1997 that similar contractual limitations (in that case, leases at Mist Field) were sufficient to satisfy these criteria. CU 2-97, finding 18.

5. OAR 660-006-0025(6)

“Nothing in this rule relieves governing bodies from complying with other requirement contained in the comprehensive plan or implementing ordinances such as the requirements addressing other resource values (e.g., Goal 5) which exist on forest lands.”

NWN has demonstrated compliance with the other applicable, forest-related provisions of Columbia County’s comprehensive plan and zoning ordinance.

6. OAR 660-006-0029

“Siting Standards for Dwellings and Structures in Forest Zones”

The following siting criteria or their equivalent shall apply to all new dwellings and structures in forest and agriculture/forest zones. These criteria are designed to make such uses compatible with forest operations and agriculture, to minimize wildfire hazards and risks and to conserve values found on forest lands. A governing body shall consider the criteria in this rule together with the requirements OAR 660-006-0035 to identify the building site:”

The proposed expansion is not a dwelling, but NWN does propose some new structures (for metering equipment, valving equipment and dehydration units) at Miller Station. Therefore the following criteria apply:

7. OAR 660-006-0029

*“(1) Dwellings and structures shall be sited on the parcel so that:
(a) They have the least impact on nearby or adjoining forest or agricultural lands;”*

The proposed expansion and gathering lines will be located underground, except for equipment at Miller Station and isolation valves which are required under federal safety regulations. It will not have any off-site impacts on nearby or adjoining farm and forest lands.

8. OAR 660-006-0029

“(b) The siting ensures that adverse impacts on forest operations and accepted farming practices on the tract will be minimized;”

The proposed expansion and gathering lines will be located on right-of-way under easements granted by the forestry operator. In addition, the right of way has been sited along existing logging roads, to the extent practicable, and its size is the minimum needed, further reducing impacts to forest lands. The new equipment at Miller Station will not affect surrounding forestry operations because it will not increase the size of the station.

9. OAR 660-006-0029

“(c) The amount of forest lands used to site access roads, service corridors, the dwelling and structures is minimized; and”

The project will use existing logging roads for access wherever possible. Access to Miller Station will be by logging roads already in use for the current facility.

10. OAR 660-006-0029

“(d) The risks associated with wildfire are minimized.”

The well-sites will be constructed on cleared, graveled pads with a buffer suitable to prevent the spread of forest fire.

11. OAR 660-006-0029

“(2) Siting criteria satisfying section (1) of this rule may include setbacks from adjoining properties, clustering near or among existing structures, siting close to existing roads and siting on that portion of the parcel least suited for growing trees.”

Gathering lines will use existing logging roads to the extent feasible, and the Miller Station improvements will not increase the size of the station. NWN has minimized the use of land better suited for growing trees.

12. OAR 660-006-0035

“Fire Siting Standards for Dwellings and Structures

The following fire siting standards or their equivalent shall apply to new dwelling or structures in a forest or agriculture/forest zone:

(1) The dwelling shall be located upon a parcel within a fire protection district or shall be provided with residential fire protection by contract. If the dwelling is not within a fire protection district, the applicant shall provide evidence that the applicant has asked to be included within the nearest such district. If the governing body determines that inclusion within a fire protection district or contracting for residential fire protection is impracticable, the governing body may provide an alternative means for protecting the dwelling from fire hazards. The means selected may include a fire sprinkling system, onsite equipment and water storage or other methods that are reasonable, given the site conditions. If a water supply is required for fire protection, it shall be a swimming pool, pond, lake, or similar body of water that at all times contains at least 4,000 gallons or a stream that has a continuous year round flow of at least one cubic foot per second. The applicant shall provide verification from the Water Resources Department that any permits or registrations required for water diversion or storage have been obtained or that permits or registrations are not required for the use. Road access shall be provided to within 15 feet of the water's edge for firefighting pumping units. The road access shall accommodate the turnaround of firefighting equipment during the fires season. Permanent signs shall be posted along the access route to indicate the location of the emergency water source.

(2) Road access to the dwelling shall meet road design standards described in OAR 660-006-0040.

(3) The owners of the dwellings and structures shall maintain a primary fuel-free break area surrounding all structures and clear and maintain a secondary fuel-free break area in accordance with the provisions in

"Recommended Fire Siting Standards for Dwellings and Structures and Fire Safety Design Standards for Roads" dated March 1, 1991 and published by the Oregon Department of Forestry.

(4) The dwelling shall have a fire retardant roof.

(5) The dwelling shall not be sited on a slope of greater than 40 percent.

(6) If the dwelling has a chimney or chimneys, each chimney shall have a spark arrester."

Subsections 1,2,4,5 and 6 of this provision apply only to "dwellings." NWN does not propose to construct any dwellings, so these provisions are not applicable. Subsection 3 potentially applies, although Columbia County in 1997 did not find it applicable or require compliance with it. In any case, NWN meets the fire break requirement because gathering lines will be buried underground (except for isolation valves which are required to meet federal safety regulations) within a cleared right-of-way generally 40 feet in width.

13. OAR 660-006-0040

"Fire Safety Design Standards for Roads

The governing body shall establish road design standards, except for private roads and bridges accessing only commercial forest uses, which ensure that public roads, bridges, private roads and driveways are constructed so as to provide adequate access for fire fighting equipment. Such standards shall address maximum grade; road width, turning radius, road surface, bridge design, culverts, and road access taking into consideration seasonal weather conditions. The governing body shall consult with the appropriate Rural Fire Protection District and Forest Protection District in establishing these standards."

This provision is applicable to the local government rather than directly to NWN. In any case, the project has been reviewed by and has the support of a number of affected fire departments.

Summary - Directly Applicable LCDC Statutes and Rules: The applicant has shown compliance with LCDC statutes and rules directly applicable to the facility. OOE requested comment from DLCD on this Application and they indicated no other directly applicable rules.

Conclusion: The proposed expansion complies with the statewide planning goals, applicable substantive criteria from the county's land use ordinance and comprehensive plan, and with directly applicable LCDC rules. Therefore the Council finds compliance with its Land Use standard. The Columbia County Planning Commission commented on the project and recommended the following conditions:

- 1) Applicant shall provide Columbia County Land Development Services (LDS) with drawings

showing the final locations of all wells (underground natural gas storage facilities) and pipelines as constructed.

- 2) Applicant shall submit to Columbia County LDS plans for avoiding, restoring or mitigating any wetlands crossed by the pipelines or shall provide a letter from the Oregon Division of State Lands that all DSL's requirements have been met regarding wetlands in the area.
- 3) Applicant shall submit to LDS a letter from the Oregon Department of Transportation that all of ODOT's permit requirements have been met.
- 4) The applicant shall submit to LDS a letter from the Mist-Birkenfeld & Vernonia Fire Districts stating that all fire safety concerns have been addressed.

These shall be added as conditions to the site certificate.

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 find that the design, construction and operation of the facility located outside these areas is not likely to result in significant adverse impact to any listed protected area.

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

The nearest listed protected area is an Oregon State University research forest located about five miles northwest of the storage facility. All other protected areas are more than ten miles from the storage facility. The facility's most visible feature is the Miller Station, and no significant changes to Miller Station are proposed, beyond what was permitted by Amendment #4 in 1997. NOX emissions are would not increase by operating the compressor at full capacity, so that removing operating restrictions on the new compressor would not affect air quality at the OSU research area or any of the more distant protected areas. No new pipelines across the Nehalem River are proposed. Therefore the Phase 3 development will not result in adverse water quality impacts at any of the listed protected areas.

The impacts of construction (such as noise and land disturbance) will be confined to the immediate vicinity of Miller Station and the sites of the new gathering lines, or will be short-term and of a small magnitude (such as construction-related traffic). For these reasons, construction would not adversely affect any protected area. Likewise, operation of the expanded facility would not change certain impacts (such as water consumption and wastewater generation at Miller Station) while other impacts (such as noise from compressor operation and maintenance of clear pipeline rights-of-way) would be confined to the immediate area and would not affect even the closest protected area.

Conclusion: The Phase 3 development 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 NWN's ability to procure funds for site restoration.

NWN estimates that the restoration cost attributable to the Phase 3 expansion will be approximately \$100,000 in 1996 dollars. This expansion does not require the installation of major new components at Miller Station, and does not significantly increase the cost to restore the existing site as originally permitted. For this reason, we concur in this cost estimate.

NWN provided Annual Financial Reports for 1997, 1996 and 1995. NWN showed total operating revenues of \$362 million in 1997, \$380 million in 1996, and \$356 million in 1995, with net operating revenue of \$232 million in 1997, \$237 million in 1996, and \$212 million in 1995. The financial report for 1997 also shows that at year end 1997, NWN assets included \$6.7 million in cash and cash equivalents. NWN has paid dividends each year for 40 years, providing additional evidence of the NWN's financial stability.

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

Conclusion: The Council finds that NWN is reasonably likely to be able to secure a bond or comparable security to secure any site restoration costs resulting from the Phase 3 expansion. No new conditions are required.

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. The goal is "no loss of either habitat units or habitat value." The implementation standard requires avoidance of impact.

Habitat Category 2 is habitat of high value. The goal is "no net loss of either habitat units or habitat value." The implementation standard is avoidance of impact or mitigation in-kind and

on-site.

Habitat Category 3 is habitat of high to medium value. The goal is “no net loss of either habitat units or habitat value. The implementation standard is avoidance of impact or mitigation either in-kind or out-of-kind, and either on-site or off-site.

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

Construction-related Impacts: The gas storage facility expansion will require modification of equipment at Miller Station and construction of about 6,500 feet of underground pipeline in the vicinity of the Reichhold Pool, about two and one-half miles south of Miller Station. Activities at Miller Station will have an insignificant effect on fish and wildlife habitat, as they will occur adjacent to existing structures within the fenced area that has already been cleared of vegetation.

The proposed route for the gathering lines follows existing gravel roads for about half its length. The remainder crosses young coniferous forest (10 to 20 years old) and cleared forest areas (clear cuts). Both of these habitat types are common in the Mist area and surrounding lands. The proposed location of the gathering lines is on land owned by Longview Fibre Company and is used for timber production. The ODFW considers both of these to be Habitat Category 3 (McEwen, ODFW, pers. comm. at NWN meeting, Oct. 6, 1998). The mitigation goal for this habitat category is “no net loss of either habitat units or habitat value”. This may be achieved through “in-kind or out-of-kind, on-site or off-site “ mitigation.

Construction-related impacts would be short-term and localized. Gathering line construction would disturb soils and remove vegetation along the portions of the route that cross forested and clear-cut lands. The route avoids areas of known slope instability and construction should have minimal impact on existing slope stability. Water erosion along the route will be controlled using graded water bars and reestablishing vegetation. Native soils will be used to backfill the pipeline trench. Water breaks will be installed as necessary along the pipeline to retard ground water flow along the pipeline and reduce potential for erosion of backfill. After construction, vegetation would be reestablished, except for large shrubs and trees, which would not be allowed within the 40-foot wide maintenance right-of-way. Overall, assuming successful revegetation and erosion control, the long-term effect will be to convert several acres of forested habitat to non-forested habitat. The ODFW considers this to be consistent with the goal of no net loss through “out-of-kind” mitigation (McEwen, ODFW, pers. comm. to Meehan, OE, Nov., 13, 1998).

Operation-related Impacts: Operation of the underground gathering lines would have no adverse impact on fish or wildlife habitat, except for minor disturbance associated with routine inspection of the line and maintenance of the right-of-way. Post-construction activity and operation of Miller Station will not change as a result of the modification of equipment and would have an insignificant effect on fish or wildlife habitat.

Conclusion:

NWN has committed to mitigation measures in the Application and in correspondence with

OOE. In consultation with ODFW, the following measures shall be added to the conditions in the site certificate:

1. NWN shall return the construction area to its approximately its original grade, and revegetate the disturbed areas using appropriate plant species. NWN will allow and encourage natural vegetation to return in the disturbed area, except that NWN may prevent large trees from growing in the permanent maintenance right-of-way which shall be as narrow as practicable and no greater than 40 feet wide.
2. During construction NWN shall use appropriate erosion control and sediment control measures, such as those in Washington County Erosion Control Plans Technical Guidance Book (February 1994), as necessary to prevent material from leaving the construction area or adversely affecting water quality in nearby and downslope streams⁶. NWN shall also use best management practices (BMP) and follow Oregon Department of Forestry, Forest Practice Administrative Rules during construction.

As conditioned, the Council finds that the proposed phase 3 expansion of the Mist Storage Facility complies with the Council's Fish and Wildlife Standard, OAR 345-22-060.

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.

The study area for this amendment is the same as the study area for Amendment #4 in 1997. In the Final Order for that amendment, the Council found that the development of the Calvin Creek storage area did not have the potential to significantly reduce the likelihood of survival or recovery of any if the listed species.

NWN is not proposing to enlarge Miller Station or to install any major new equipment there. Therefore the only area with any potential impact on listed species is the area of the gathering lines proposed for the Reichhold pool. In consultation with ODFW and Oregon Department of Agriculture, we find the following:

6 NWN letter from Charlie Stinson to Adam Bless, December 21, 1998

Plants: No plant species listed as endangered or threatened under ORS 564.105(2) occur in the area of the proposed gathering line or Miller Station (R. Meinke, ODA, pers. comm. to T. Meehan, OE, Sept. 24, 1998).

Wildlife: No wildlife species listed as endangered or threatened under ORS 496.172(3) regularly occur in, or significantly use, the area of the proposed gathering line or Miller Station.

Conclusion: No relevant conservation programs exist. The proposed Phase 3 storage expansion does not have the potential to reduce the likelihood for survival or recovery of any of the listed species. The Council finds that the proposed storage expansion complies with the its Threatened and Endangered Species Standard. No new 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: There is no federally owned land in the vicinity of the gas storage facility. The applicable local land use plan is Columbia County's Comprehensive Plan. It contains an inventory of five "County Scenic Resources." The gas storage facility is not visible from (or within the viewshed of) any area identified by Columbia County as a scenic resource.

The plan also identifies portions of Highway 47 as a state-designated scenic highway. Miller Station is visible from two points along Highway 47. The modifications proposed at Miller Station include adding a second natural-gas dehydration tower. It will be about 20 feet high and four or five feet in diameter. It will be built next to a similar existing tower. The existing tower is not visible from any significant distance due to the 30- to 40-foot fir trees that surround the station. The new tower will not result in a significant visual change in the appearance or visibility of the station. Therefore, it will not have a significant adverse impact on important scenic values.

Conclusion: The Phase 3 expansion of the storage facility 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: No previously recorded archeological sites have been identified in the gas storage facility expansion project area. An archeologist surveyed the project area on June 26, 1998. The archeological survey of the gathering lines and well sites did not identify any cultural resources.

Conclusion: Taking into account mitigation, the Phsae 3 storage expansion is not likely to result in significant impacts to historic, cultural or archeological resources or archeological objects or sites protected by this rule. No new conditions are required.

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 that 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: NWN evaluated recreation impacts within a five-mile radius of the proposed site of the gas storage facility expansion. Recreation opportunities include sites and facilities identified by Columbia County and fishing and hunting throughout the area.

The Columbia County Forests, Parks and Recreation Master Plan identifies 20 county parks, forests, forest/parks and boat dock facilities and another 20 public and private facilities that provide recreational opportunities. None are within five miles of the proposed site of the gas storage facility expansion.

Columbia County plans to develop bicycle trails in the future. However, gas storage construction activity will be complete by late 2000, several years before the County plans to develop the closest bicycle trail.

The gas storage project is within a major big game habitat area. The area is used for hunting elk, deer, pheasant, grouse and bear. The project could result in a localized, short-term impact to hunting during construction, and some habitat loss or alteration over a longer term. However, the project site does not provide recreation opportunities that are unusual or unique, and the Office does not consider these impacts to recreation to be significant. Miller Station is not adjacent to a river or stream and the proposed locations for the gathering lines are not near and do not cross any river or stream. Thus, the proposed gas storage facility expansion will have no effect on

streams or fishing activity.

For these reasons, the gas storage facility expansion is not likely to result in a significant adverse impact to important recreation opportunities.

Conclusion: The Phase 3 storage 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: The socio-economic study area for the gas storage facility expansion is 30 miles from the site boundary. Potential providers of governmental services in the study area include Columbia and Clatsop Counties and incorporated cities and towns, including Vernonia and Clatskanie. The expansion will include modifications at Miller Station and construction of about 6,500 feet of new underground gathering pipelines in the Calvin Creek area about two and one-half miles south of Miller Station. Work at Miller Station would occur from May through August 2000. Construction of the gathering lines would occur during April and May 2000. NWN estimates that work in the Calvin Creek area will require a maximum of 25 workers onsite at any time, and that improvements to Miller Station will require up to 30 workers. NWN states that construction work will be accomplished primarily with local workers and that any out-of-area workers are expected to be on site no longer than two months.

Sewers and Sewage Treatment: No community in the area provides sewers or sewage treatment to the existing gas storage facility or to the surrounding area. Miller Station relies on its own on-site sewage disposal systems. Operation of the expanded gas storage facility would not require an increase in operational personnel or an increase in wastewater requiring sewage treatment. The expanded station will continue to rely on its on-site sewage treatment systems. For these reasons the expansion is not likely to result in an adverse impact on local communities' sewers or sewage treatment facilities.

Water: No community in the area provides water to the existing gas storage facility or to the surrounding area. Water for Miller Station is obtained from existing groundwater wells. The expanded station will continue to meet its water needs from these wells. For these reasons the expansion is not likely to result in an adverse impact on local communities' ability to provide water.

Stormwater Drainage: No community in the area provides stormwater management to the existing gas storage facility or to the surrounding area. The proposed changes to Miller Station would occur within the existing fenced site and would not increase stormwater runoff.

Solid Waste Management: No community in the area provides solid waste management services to the existing gas storage facility or to the surrounding area. The proposed expansion of Miller Station does not involve major construction activity and would not result in a large volume of solid waste. Likewise, construction of the proposed gathering lines would not result in a large volume of solid waste that would require disposal. NWN will contract with local service companies to remove and dispose the solid waste from construction and operation of the expanded storage facility. For these reasons, the expansion is not likely to result in an adverse impact on local communities' ability to provide for solid waste management.

Housing: The applicant believes that construction of the gas storage facility expansion will be accomplished primarily with local workers, and that any out-of-area workers would be in the area for no more than two months. Construction of the gathering lines is scheduled for April and May 2000 and work at Miller Station for May through August 2000. Construction of the South Mist Feeder Pipeline expansion is scheduled to be completed by the end of 1999. There are communities within a 30-mile commute distance, such as Vernonia, Clatskanie and St. Helens in Oregon, and Longview and Kelso in Washington, that together have several hundred motel rooms. NWN estimates that much of the temporary construction force will use mobile homes and trailers and will use facilities in the area set up for that purpose. For these reasons, the expansion is not likely to result in an adverse impact on local temporary housing.

Traffic Safety: The only impact to traffic will be during construction. NWN estimates construction (at both Miller Station and in the Calvin Creek area) will require up to 120 vehicle trips per day. The operation of the expanded storage facility will require no additional traffic. Construction of the gathering pipelines and the modification at Miller Station will not occur on or next to any county or state highway. Traffic impacts would be limited to a short-term, small increase in traffic on county roads and state highways (Highway 202 and Highway 47) as a result of construction workers and construction vehicles and equipment moving to and from the work sites. The principal roads have adequate capacity for this small increase. This increase would occur from April to August 2000, and would not overlap with construction of the 24 inch pipeline, which will take place in 1999.

Police and Fire Protection: Columbia County Sheriff's Department provides police protection for the gas storage facility expansion area. The department indicates that the existing storage facility has not caused major problems for law enforcement. The department believes that neither construction nor operation of the expanded facility would pose problems for law enforcement.

The Mist-Birkenfeld Rural Fire Protection District provides fire protection services in the gas storage expansion area. The expansion would pose little additional fire hazard in the area. NWN has operated its existing underground gas storage facility for about ten years without causing any fires or other hazards. The wellheads have safety features including relief valves and automatic shutdown systems. NWN's trained personnel monitor the gas storage facilities from Miller Station. In 1996 the PUC inspected Miller Station and found it in full compliance with applicable pipeline safety regulations of the U.S. Department of Transportation. In addition, the Mist-Birkenfeld fire district believes that the proposed expansion will not adversely affect the district's ability to provide fire protection. For these reasons, the expansion is not likely to result

in a significant adverse impact on the ability of local communities to provide police or fire protection.

Health Care: The gas storage facility expansion will require a small work force and will be completed within a few months. Operation of the expanded facility will require no increase in the current on-site personnel at Miller Station. The construction activities required are similar to those that already occur in the Mist area as a result of recent and on-going exploration for, and production of, natural gas. The expansion would place few additional demands on health care facilities that serve the area.

Schools: The gas storage facility expansion would require primarily by local workers and would be completed between April and August 2000. For these reasons, it would not result in additional demands on schools.

Conclusion: The Council finds that the Phase 3 storage expansion 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. No new conditions are required.

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, NWN describes a plan to minimize the generation of solid waste, 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 construction and describes NWN's existing recycling program. The types of wastes expected are the same as for Amendment #4 in 1997.

During operations, NWN 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. NWN will continue to follow the recycling and waste minimization measures currently used at Miller Station, as required by a condition in Amendment #4.

The compression and natural gas treatment operations at Miller Station do not require continuous use of water. The only consumptive use of water for the construction phase would be one time uses of water for hydrostatic pressure testing of the new gathering lines. The hydrostatic test is scheduled at a time when water is abundant in the Nehalem, and the gathering lines for this proposed amendment are small (12 inch diameter or less) in comparison to those installed in 1997.

NWN 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. NWN has committed to a recycling and disposal program for construction wastes. The program was added as a condition in Amendment #4. The program includes:

(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 Phase 3 storage expansion will minimize the generation of solid waste and waste water, and NWN will reuse and recycle such wastes to the extent practicable. In addition, accumulation, storage, disposal and transportation of waste from the Phase 3 storage expansion will have a minimal adverse impact on surrounding and adjacent areas. The above recycling and disposal program is already a site certificate condition, but that program shall apply to Amendment #6 as well. No further conditions are required.

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

Pipelines associated with the proposed expansion would be retired in the same manner as existing ones. NWN 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.

Injection and monitoring wells would be decommissioned in the same manner as would be done for the existing facility. Restoring the site at Miller Station would not be significantly affected by the proposed expansion. 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.

Most of the costs of retirement are associated with Miller Station, and are not significantly changed by the Phase 3 expansion. The impact on restoration costs attributable to the Phase 3

expansion is a small fraction of the general retirement costs.

Conclusion: We conclude that, with the above conditions, the site can be restored to a useful, non-hazardous condition. No new conditions are required.

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

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

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;
- (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 NWN will comply with Federal regulations in 49 CFR 192. The Oregon PUC administers and inspects for compliance with 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 performed by NWN demonstrate that the facility complies with noise standards in OAR 345 Division 35. The pipelines and wells do not produce appreciable noise. Noise from Miller Station will not increase if phase 3 is permitted.

NWN conducted noise testing on July 27 and 28, 1998. 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. The noise was measured at the nearest noise sensitive location, a habitable dwelling located approximately 6100 feet from Miller station. Noise was well below the levels allowed by OAR 345-35-035, and in fact was below the levels measured prior to construction in February 1997. We conclude that the proposed amendment will not affect NWN's continued compliance with the noise standard.

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 pressure 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 NWN Operations control room in Portland.

Under Amendment #4, NWN expanded its Emergency Plan from the original storage development to include the proposed additional reservoir and equipment associated with the Phase 2 (Calvin Creek) amendment. This was added to the Site Certificate as a condition, and will continue to apply.

Part (6) is met because the phase 3 expansion 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 NWN 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 has stated (Exhibits 17 and 18 of the Application) that NWN complies with the requirements of 49 CFR 192.

Part (3) is met because noise testing conducted on July 27 and 28, 1998 demonstrated that the facility complies with OAR 340 Division 35 noise standards and because NWN does not proposed to add any new compression equipment. The phase 3 expansion 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 are 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, and similar isolation valves will be located at the ends of the new gathering lines associated with phase 3, as required.

Part (5) is met based on NWN'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 NWN's monitoring program acceptable and in compliance with EFSC monitoring requirements. The Council confirmed this finding in its order approving amendment #4.

NWN 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. NWN 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. The Council concludes that the Phase 3 expansion meets OAR 345-24-060. No

new conditions are required.

C. Requirements of Other Agencies

The phase 3 expansion requires no permits other than the site certificate amendment.

The gathering lines for Reichhold Pool were constructed in 1998. These lines were not under EFSC jurisdiction because they were constructed for testing or reservoir maintenance purposes in accordance with ORS 469.300(9)(a)(H).

The locations of the proposed gathering lines were examined for the presence of wetlands on June 25 and 26, 1998. Two wetlands were found in the vicinity of the proposed gathering lines. The lines were routed to avoid each wetland. Therefore no DSL permit was required. Hydrostatic testing was completed in October 1998. Therefore no further permits are needed.

Operation of the new compressor will not require an update to NWN's Air Contaminant Discharge Permit, because the existing permit is already based on the compressors' rated capacity. In any case, that permit has been delegated by the federal government to the Department of Environmental Quality.

V. Issues Raised in Public Comment

OOE received comments verbally and in writing from several property owners along the proposed South Mist Feeder pipeline route, all regarding the proposed South Mist Feeder expansion. No comments were received concerning the phase 3 expansion of the underground storage facility.

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 under OAR 345 Division 27

- (1) NWN 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 6 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 March 31, 2000 and be completed not

later than December 31, 2001.

(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) NWN shall prevent any condition over which NWN has control from developing on the Project site that would preclude restoration of the site to a useful condition.

(6) NWN 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, NWN 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) The horsepower limitations at Miller Station imposed as conditions to Amendment #4 to this site certificate are removed. NWN may operate all compressors installed as of January 11, 1999 at full rated capacity.

Site Specific Conditions Under 345-027-0023

(1) NWN shall notify OOE, the State Building Codes Division and the Department of Geology and Mineral Industries promptly if site investigations or trenching reveal that conditions in the foundation rocks differ significantly from those described in the Application for Amendment #6. The Council may, at such time, require the certificate holder to propose additional mitigating actions in consultation with the Department of Geology and Mineral Industries and the Building Codes Division.

(2) NWN shall notify OOE, the State Building Codes Division and the Department of Geology and Mineral Industries promptly if shear zones, artesian aquifers, deformations or clastic dikes are found at or in the vicinity of the site.

(3) NWN shall submit to the department copies of all incident reports involving the certified pipeline required under 49 CFR §192.709.

(4) The Site Certificate shall specify the site boundary and total permitted daily throughput of the facility.

Monitoring Conditions Under 345-027-0028

(1) NWN shall establish, in consultation with affected state agencies and local governments, monitoring programs as required by the Site Certificate for impact on resources protected by the standards of division 22 and 24 of this chapter, and to ensure compliance with the Site Certificate.

(2) If NWN becomes aware of a significant environmental change or impact attributable to the facility, NWN shall submit to OOE as soon as possible a written report identifying the issue and assessing the impact on the facility and any affected Site Certificate conditions.

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 14 of the Application for Amendment #6. Significant changes in pipeline corridor shall require prior Council approval.
- (2) NWN shall design and construct the gathering lines substantially in accordance with the recommendations in Sections 5.2 and 5.3 of Exhibit 14 of the Application for Amendment #6.

Land Use

- (3) NWN shall provide Columbia County Land Development Services (LDS) with drawings showing the final locations of all wells (underground natural gas storage facilities) and pipelines as constructed.
- (4) NWN shall submit to LDS a letter from the Oregon Department of Transportation that all of ODOT's permit requirements have been met.
- (5) NWN shall submit to LDS a letter from the Mist-Birkenfeld & Vernonia Fire Districts stating that all fire safety concerns have been addressed.

Fish and Wildlife Habitat

- (6) NWN shall return the construction area to its approximately its original grade, and revegetate the disturbed areas using appropriate plant species. NWN will allow and encourage natural vegetation to return in the disturbed area, except that NWN may prevent large trees from growing in the permanent maintenance right-of-way which shall be as narrow as practicable and no greater than 40 feet wide.
- (7) During construction NWN shall use appropriate erosion control and sediment control measures, such as those in Washington County Erosion Control Plans Technical Guidance Book (February 1994), as necessary to prevent material from leaving the construction area or adversely affecting water quality in nearby and downslope streams. NWN shall also use best management practices (BMP) and follow Oregon Department of Forestry, Forest Practice Administrative Rules during construction.

Waste Minimization

- (8) NWN shall transport construction waste materials to an appropriate recycling facility or to an approved sanitary landfill for nonrecyclable goods. NWN 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.
- (9) 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. NWN may use alternate methods of disposal if approved by the Office of Energy.

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

(2) NWN 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 gathering lines connecting the well sites with the sixteen inch gathering line between Calvin Creek area and Miller Station.

(4) NWN 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 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.

This program shall be provided to the Oregon Office of Energy for review, but a program that is already maintained as of March 30, 1999 in compliance with subpart L of 49 CFR 192 is hereby found to comply with this condition.

March 30, 1999



Terry Edvalson, Chair
Energy Facility Siting Council