

STATE OF VERMONT
PUBLIC SERVICE BOARD

Docket No. 6480

Petition of Vermont Yankee Nuclear Power Corporation)
for a Certificate of Public Good to construct a Bulk-Gas)
Storage Facility in Vernon, Vermont)

Hearing at
Montpelier, Vermont
June 5, 2001

Order entered: 6/27/2001

PRESENT: Lawrence Lackey, Hearing Officer¹
Peter Meyer, Hearing Officer

APPEARANCES: John H. Marshall, Esq.
Downs Rachlin & Martin PLLC
for Vermont Yankee Nuclear Power Corporation

Geoffrey Commons, Esq.
for Vermont Department of Public Service

Warren Coleman, Esq.
for Agency of Natural Resources

I. Introduction

On February 23, 2001, Vermont Yankee Nuclear Power Corporation ("Vermont Yankee") petitioned the Public Service Board ("Board") for a certificate of public good (a "CPG") pursuant to 30 V.S.A. § 248 to construct a bulk-gas storage facility (and associated facilities) to supply hydrogen and oxygen to the electric-generation station on property owned and controlled by Vermont Yankee in Vernon, Vermont, (the "Project"). The hydrogen and oxygen will be used for existing purposes and to allow Vermont Yankee to introduce "Hydrogen Water Chemistry" to the station's reactor water, which, when combined with noble metals, reduces

1. Subsequent to the technical hearing, the Board appointed Peter Meyer, Environmental Analyst, as Hearing Officer to replace Mr. Lackey.

"Intergranular Stress Corrosion Cracking" ("IGSCC") in the reactor vessel and recirculation pipes.

As represented in its petition, Vermont Yankee proposes to construct the Project commencing in the Summer of 2001. Pet. at 3. Vermont Yankee requested that the Board treat its application under the procedures established by subsection (j) of § 248, which allow the Board to proceed without notice and hearings for electric generation facilities if the facilities are of limited size and scope and the petition does not raise a significant issue with respect to the substantive criteria established by § 248. *Id.*; see 30 V.S.A. § 248(j). By letter dated March 5, 2001, the Board informed Vermont Yankee of the Board's conclusion that the petition did not qualify for the subsection (j) review procedure. Ltr. of 3/5/01 from Board Clerk. On March 8, 2001, therefore, Vermont Yankee amended its petition to withdraw its request for subsection (j) review and agreed to proceed under the normal procedure established by 30 V.S.A. § 248. See Amended Petition.

On March 21, 2001, the Board convened a prehearing conference on the petition at which it adopted a schedule providing for discovery and for the filing on May 4, 2001, of either a settlement between the Vermont Department of Public Service (the "Department") and Vermont Yankee or of the prefiled testimony of the Department stating its position on the Project. Tr. 3/21/01 at 4-5. The Board also asked Vermont Yankee to answer five questions about the Project. See *id.* at 8-17. The Board subsequently appointed Lawrence Lackey, Utilities Analyst, as Hearing Officer to hear Vermont Yankee's petition. On April 19, 2001, the Board concluded a site visit and then held a public hearing on the Project. See tr. 4/19/00. Only one member of the public spoke at the hearing, a representative of the Town of Vernon who advised the Board that the town supports the Project. *Id.* at 9-10.

Vermont Yankee and the Department engaged in discussions, review, informal discovery, and formal discovery with respect to this filing. By a Stipulation filed on May 4, 2001, Vermont Yankee and the Department agreed to support the issuance by the Board of a CPG for the Project. Vermont Yankee and the Department also prefiled testimony answering the Board's five questions and, in the case of the Department, reported on its analysis of the Project. Finally,

Vermont Yankee and the Department waived service of this Proposal for Decision on them pursuant to 30 V.S.A. § 811.

A technical hearing was held on June 5, 2001, at the Board Hearing Room, Chittenden Bank Building, 112 State Street, Montpelier, Vermont.

II. Findings

Pursuant to 30 V.S.A. § 8, and based on the record and evidence before me, I present the following findings of fact and conclusions of law to the Board.

A. The Project

1. Vermont Yankee owns and operates a boiling-water-reactor ("BWR"), nuclear-power plant (the "Station") in Vernon, Vermont, which is an electric-generation facility subject to the Board's jurisdiction. Hoffman pf. at 1; Leach pf. at 1.
2. Vermont Yankee currently uses hydrogen at the Station to cool the generator, and injects oxygen into the Station's reactor water to replace oxygen lost through the water-cooling process, thereby preventing the corrosive effect of low-oxygen water. Hoffman pf. at 2-3.
3. Vermont Yankee proposes to construct the Project to supply hydrogen and oxygen to the Station's existing operations and to introduce "Hydrogen Water Chemistry" to the reactor-water chemistry, explained in Findings 17-27 below. *Id.* at 3.
4. Specifically, the Project includes oxygen-supply tanks, hydrogen-supply tanks, flow-control equipment and isolation equipment, buried piping from the area of the tanks to existing buildings at the Station, and the construction of an access road and tanker parking and unloading area. Leach pf. at 2-3; Hoffman pf. at 2.
5. The oxygen-supply and hydrogen-supply tanks will supply oxygen and hydrogen to flow-control equipment and isolation equipment located in the existing buildings. Leach pf. at 2.
6. The hydrogen-supply tanks will be located in the "Owner Controlled Area" (or "OCA") at the south end of the Station, identified on the Project Site Plan as the "Hydrogen Storage Area." Leach pf. at 2-3.
7. The Hydrogen Storage Area will consist of bays for two hydrogen-gas tanker-trailers on a concrete pad, surrounded by a chain-link fence with a minimum height of six feet. *Id.* at 3.
8. There will be a total of five light fixtures on four, fourteen-foot stanchions at the Hydrogen Storage Area; the flow-control and light-fixture stanchions will be protected with barricades, and the hydrogen trailers will be approximately 40 feet in length, 8 feet wide and 12 feet high. *Id.* at 3; Boemig pf. at 11.

9. The trailers will be connected via a flexible line to a manifold containing pressure-reducing valves, isolation valves and maintenance valves. Leach pf. at 3.

10. At the outlet of the pressure-reducing manifold, there will be a connection to the underground piping which will transmit the hydrogen to the turbine building at the Station to supply the existing main generator's hydrogen-cooling system and a Hydrogen-Water Chemistry (or "HWC") supply system. Id. at 3.

11. Between deliveries of hydrogen gas, there will normally be one hydrogen-gas tanker at the Hydrogen Storage Area. Id.

12. A new hydrogen-gas tanker-trailer will be delivered to the Hydrogen Storage Area approximately once every two to three weeks. Id.

13. The tractor-trailer delivering the new bulk-hydrogen gas tanks will park the replacement hydrogen-gas storage tanker in the empty bay and then connect with the near-depleted tanker-trailer in the other bay for delivery back to a hydrogen-gas-supply plant. Id.

14. Vermont Yankee may store larger bulk amounts of oxygen gas in the enclosure at the location identified on the Site Plan as the "Oxygen Storage Alternate Site." Id.

15. The Oxygen Storage Alternate Site will consist of a 500- to 1,000-gallon storage tank for liquid oxygen and an external vaporizer to change the liquid oxygen to gas; the discharge of the vaporizer will be connected to piping and transmitted to the turbine building at the Station for injecting into the off-gas stream. There will be one light fixture on a fourteen-foot stanchion to provide lighting at the site. Id. at 3-4; Boemig pf. at 11.

16. The purpose of the oxygen is to assure the presence of enough oxygen to combine with any excess hydrogen to become water in the discharge line, downstream from the main condenser. Leach pf. at 4.

17. The primary purpose of the new hydrogen-injection system is to address a type of wear known as "Intergranular Stress Corrosion Cracking" in the reactor-pressure-vessel internals and recirculation-system piping. Id. at 4.

18. IGSCC in BWRs is caused because certain welded stainless steels in the reactor-vessel internals or associated piping can be susceptible to IGSCC due to the oxidizing nature of the BWR coolant. Hoffman pf. at 4.

19. The only cost-effective method to address IGSCC known today is to change the oxidizing nature of the reactor water. Id. at 4-5.

20. To change the water's oxidizing nature through HWC, Vermont Yankee will inject hydrogen into the feedwater system to cause a reduction in excess dissolved oxygen generated within the reactor systems and recirculation piping and thereby lower the corrosion potential of the reactor coolant. Id. at 3.

21. Hydrogen addition to the feedwater results in an excess ratio of hydrogen to oxygen at the entrance to the off-gas system; the HWC system therefore also provides an oxygen source upstream of the off-gas recombiner to maintain a stoichiometric mixture of hydrogen and oxygen. Id. at 3-4.

22. A potential effect of injecting hydrogen into reactor water is slightly higher internal and external radiation doses inside the Station and at the site boundary. Id. at 5.

23. Industry studies have demonstrated that the injection of noble metals in the reactor-coolant system improved the effectiveness of HWC, thereby reducing the amount of hydrogen required and, in turn, reducing any increase in radiation doses to acceptable levels at the site boundary. Id.

24. A 1996 project under the joint auspices of the Electric Power Research Institute ("EPRI") and General Electric Company showed that the injection of low levels of hydrogen in the presence of noble metals provided significant protection against IGSCC, with radiation rates essentially the same as before the injection. Id. at 10.

25. Because Vermont Yankee will utilize noble metals, radiation rates at the Station's site boundary will not increase significantly above existing levels once the hydrogen-injection system is fully operational and will remain below the EPA standard of 25 millirem per year and the State of Vermont's requirement of 20 millirem per year at the site boundary. Id. at 6.

26. Vermont Yankee seeks to commence construction of the Project in the Summer of 2001 so it will be available for use by year-end. Leach pf. at 4.

27. HWC will reduce the rate of IGSCC, thereby achieving very significant long-term cost savings by prolonging equipment life, reducing inspection costs, analysis costs, and lost power costs, and reducing radiation exposure to repair workers. Id. at 4.

B. Review of the Project Under the Criteria of 30 V.S.A. § 248(b)

Inapplicable Criteria

28. As a wholesale utility that does not distribute electricity to the public, Vermont Yankee has not prepared and submitted for approval an integrated-resource plan or "IRP." Consequently, criterion 6 of § 248 is not applicable. Leach pf. at 15-16; *see* 30 V.S.A. § 248(b)(6).

29. The Project is not a waste-to-energy facility requiring a favorable finding under criterion 9 of § 248(b). Leach pf. at 17; *see* 30 V.S.A. § 248(b)(9).

30. Because the Project does not require access to or use of transmission facilities, criterion 10 of § 248(b) is also not applicable. Leach pf. at 17; *see* 30 V.S.A. § 248(b)(10).

31. 30 V.S.A. § 248(b)'s other criteria -- criteria 1, 2, 3, 4, 5 and 7 -- are applicable. *See* 30 V.S.A. § 248(b).

30 V.S.A. § 248(b)(1): Orderly Development of the Region

32. The Project will not unduly interfere with the orderly development of the region, with due consideration having been given to the recommendations of the municipal and regional planning commissions, the recommendations of municipal legislative bodies, and the land conservation measures contained in the plan of any affected municipality. This finding is supported by findings 33 through 47, below.

33. On December 6, 2000, Vermont Yankee met with the Town of Vernon Planning Commission and provided the Commission with plans for the construction of the Project as required by subsection 248(f). Leach pf. at 5; *see* 30 V.S.A. § 248(f) (Supp. 2000).

34. At the meeting held on December 6, 2000, the Vernon Planning Commission passed a resolution endorsing the Project and waiving the 45-day, pre-application review allowed under subsection (f). Leach pf. at 5; *exh. VY-1 Stip (Pet. exh. DL-2)*.²

35. On December 7, 2000, Vermont Yankee also met with the Town of Vernon Selectboard and provided the Selectboard with an overview of the Project. Leach pf. at 5.

2. Because exhibit VY-1 Stip consists of several documents, the parenthetical reference identifies the specific document actually cited.

36. At the December 7 meeting, the Vernon Selectboard passed a resolution finding that the Project will not interfere with the orderly development of the region and will not burden municipal services. Id. at 5-6; exh. VY-1 Stip (Pet. exh. DL-3).

37. The Vernon Town Plan, which was adopted on April 20, 1995, was intended to be a policy document that provides guidelines to ensure that decisions made at the local, regional and state levels are in concert with the values and goals expressed in the plan. Leach pf. at 6; exh. VY-1 Stip (Pet. exh. DL-4 at 3).

38. The Vernon Town Plan specifically cites the Station, its contribution to the community's tax base and its provision of varied employment opportunities as being largely responsible for Vernon's rural independence and self-sufficiency. Leach pf. at 6; exh. VY-1 Stip (Pet. exh. DL-4 at 17).

39. The specific policies and recommendations regarding resources and economic development under the Vernon Town Plan include the following:

- * Balanced economic development will be pursued to provide long-range economic benefits including stable employment opportunities for town residents and an adequate local tax base;
- * All industry, commerce and institutions must adequately control its waste, relate satisfactorily to existing land uses, minimize increases in traffic congestion, avoid contributing to sprawl or strip development or detracting from the rural character of the town, and account to the town for both direct and indirect municipal costs;
- * Commercial and industrial development should be well-designed and attractive with ample buffer zones to protect adjacent land; and
- * Any effort which directly or indirectly accelerates economic growth should be consistent with local and regional objectives.

Leach pf. at 6-7; exh. VY-1 Stip (Pet. Exh. DL-4 at 19).

40. The Project is consistent with these specific policies of the Vernon Town Plan. Leach pf. at 6-7; findings 33-39, supra.

41. On November 28, 2000, Vermont Yankee provided the Windham Regional Commission with plans for the Project as required by subsection 248(f). Leach pf. at 8; *see* 30 V.S.A. § 248(f).

42. The Windham Regional Plan, which was adopted on December 10, 1996, is intended to provide continuing guidance for change in the Windham region. Leach pf. at 9; exh. VY-1 Stip (Pet. exh. DL-5 at 4).

43. The Windham Regional Plan was designed to have its primary relevance in its application to evaluation of major projects of regional importance when applied in conjunction with applicable town plans. Leach pf. at 9; exh. VY-1 Stip (Pet. exh. DL-5 at 5).

44. The Windham Regional Commission determined that the Project is not a "project of regional importance" as defined under the Windham Regional Plan. Leach pf. at 9.

45. The Windham Regional Plan acknowledges, in any event, the significant role that the Station plays in being one of Windham County's largest employers and in serving 33% of Vermont's annual electrical requirements at the time the Plan was drafted. Leach pf. at 9-10; exh. VY-1 Stip (Pet. exh. DL-5 at 35, 36, 111).

46. The economic policies of the Windham Regional Plan include the encouragement of businesses that offer a complementary mix of jobs that include stable, year-round employment, with competitive wages, skills-training programs, and provisions for other benefits that contribute to the quality of life for all workers. Leach pf. at 10; exh. VY-1 Stip (Pet. exh. DL-5 at 43).

47. The Project is consistent with the policies of the Windham Regional Plan. Leach pf. at 10; findings 41-46, *supra*.

30 V.S.A. § 248 (b)(2): Present and Future Demand for Service

48. The Project is required to meet the need for present and future demand for service which could not otherwise be provided in a more cost effective manner through energy conservation programs and measures and energy efficiency and load management measures. This finding is supported by findings 49 and 50, below.

49. Vermont Yankee is an already-built and operating electric-generation facility, 55% of the output of which is committed to meet the existing demand for service of Vermont ratepayers. Leach pf. at 12.

50. The Project will not increase or in any way affect the Station's capacity, and therefore the Project could not be avoided by cost-effective, demand-side management (or "DSM") measures or programs. *Id.*; Sherman pf. at 7.

30 V.S.A. § 248 (b)(3): System Stability and Reliability

51. The Project will not adversely affect system stability and reliability. By enabling the introduction of HWC, it will reduce the rate of IGSCC that may be present in the reactor-pressure vessel's internal and recirculation system piping, thereby increasing the Station's stability and reliability. Leach pf. at 13.

30 V.S.A. § 248 (b)(4): Economic Benefit

52. The Project will result in an economic benefit to the state and its residents. This finding is supported by findings 53 through 65, below.

53. The Project represents a capital investment of approximately \$717,000, which is part of a planned expenditure by Vermont Yankee of \$6.6 million to mitigate IGSCC through HWC. Hoffman pf. at 7-8.

54. The Project will be cost-effective in comparison to the alternative of utilizing smaller oxygen and hydrogen containers, which would be much more expensive due to the increase, per unit, in handling and transportation costs, and to a slightly more expensive alternative considered by Vermont Yankee that would have involved an internal hydrogen-supply system located inside an existing building. *Id.* at 8-9; Sherman pf. at 8-9.

55. The Project and HWC's implementation are justified and cost-effective within the remaining term of the Station's existing license from the Nuclear Regulatory Commission, which expires in 2012. Leach/Hoffman supp. pf. at 3; Sherman pf. at 9.

56. Vermont Yankee conducted a cost-benefit analysis of HWC using software developed by EPRI that identifies components of, in this case, a BWR station that could experience IGSCC. The analysis develops the probability over time that such components might be subject to IGSCC and quantifies the present-value benefit of implementing HWC by comparing its cost to the probability-adjusted cost of an outage required to repair components that experience IGSCC. Leach/Hoffman supp. pf. at 3-5.

57. Vermont Yankee identified seven components that it believes might experience IGSCC, eliminating other components because they had previously been repaired or replaced. Vermont Yankee judged that the risk that IGSCC would occur to these other components (during the remaining term of the Station's license) to be sufficiently low as to not warrant analysis. *Id.* at 4.

58. Vermont Yankee conducted a thorough evaluation of proposed alternatives and chose the least-cost alternative on a net-present-value basis. Sherman pf. at 6.

59. The results of Vermont Yankee's cost-benefit analysis, which compared the cost of the Project (including the HWC system) to the probability-adjusted cost of an outage required to repair components that experience IGSCC, demonstrate, under various scenarios, a net-present value savings provided by the Project between \$25 million and \$312 million. Leach/Hoffman supp. pf. at 5-8; Sherman pf. at 10.

60. Although the probability of any event occurring is never zero, with the implementation of the Project, the probability of an outage to repair components of the Station affected by IGSCC will be essentially zero. Leach/Hoffman supp. pf. at 5.

61. Vermont Yankee provided a detailed, line-by-line analysis of the \$6.8 million it intends to expend through this year related to HWC, including the \$717,000 that will be required for the Project. Leach/Hoffman supp. pf. at 7-8; *see* exh. VY-2 Stip (Pet. exh. VY-3).

62. The cost of the Project is \$13.6 million on a present-value basis (over the remaining licensed life of the Station). Leach/Hoffman supp. pf. at 6.

63. The implementation of HWC is unrelated to proposals to ramp-up or enhance Vermont Yankee's power rating. Sherman pf. at 9; Leach/Hoffman supp. pf. at 8.

64. The Project does not involve an indefinite or indeterminable economic cost, nor a high cost associated with potential accidents, cleanup or decommissioning. Sherman pf. at 9.

65. Vermont Yankee will also pay property taxes assessed on the Project to the State or to the Town of Vernon. Leach pf. at 13.

30 V.S.A. § 248 (b)(5): Land-Use and Environmental Criteria

Public Health and Safety

66. The Project as proposed will not have an undue adverse effect on aesthetics, historic sites, air and water purity, the natural environment and the public health and safety. This finding is supported by findings 67 through 134, below, which are based on the criteria specified in 10 V.S.A. §§ 1424a(d) and 6086(a)(1) through (8), 8(A) and (9)(K).

67. The Project will have no adverse effect on the existing generating Station or its transmission lines. Leach pf. at 14.

68. The Project will be designed and implemented to meet all applicable codes and standards; in particular, the Project will apply and be in compliance with the Vermont Occupational Safety and Health and Administration ("VOSHA"), the federal Occupational Safety and Health Administration ("OSHA"), the National Fire Protection Association ("NFPA"), and the American Society of Mechanical Engineers/American National Standards Institute ("ASME/ANSI") codes (together the "Codes"). Id.

69. Vermont Yankee will file with the Board a copy of the Department of Labor and Industry's construction-plans approval under the Codes when received. Leach pf. at 14.

10 V.S.A. § 6086 (a) (1): Water and Air Pollution

70. The Project as proposed will not result in undue water or air pollution. This finding is supported by findings 71 through 85, below.

71. The Project will not cause air-pollution levels that create a threat to public health or a nuisance for nearby neighbors as the only air emissions associated with the Project are those from the delivery vehicles traveling to and from the site; based on an estimated four to six truck trips per month, the emissions will be negligible. Boemig pf. at 3.

72. There are no other sources of air emissions from the Project. Id.

10 V.S.A. § 6086 (a) (1)(A): Headwaters

73. The Project area is not located in a headwaters area. The site on the Connecticut River is not characterized by steep slopes and shallow soils, it does not consist of a drainage area greater than 20 square miles, it is not over 1,500 feet in elevation (the elevation is 260 feet), it is not in the watershed of a public-water supply, and it is not a significant aquifer-recharge area. Id. at 3-4.

10 V.S.A. § 6086 (a) (1)(B): Waste Disposal

74. The Project as designed will meet any applicable health and environmental conservation regulations regarding the disposal of wastes, and will not involve the injection of waste materials or any harmful toxic substances into ground water or wells. This finding is supported by findings 75 and 76, below.

75. The unused hydrogen gas in the bulk-hydrogen storage tanker will be returned to the hydrogen-gas supply facility. *Id.* at 4.

76. The Project does not involve the disposal of waste other than the disposal of a minor amount of trees, brush and tree stumps that will comply with applicable local and state standards. *Id.* at 4-5.

10 V.S.A. § 6086 (a) (1)(C): Water Conservation

77. The Project will not affect the Station's present use of water or water-conservation measures because no new employees will be added and no additional water will be used as a result of the Project. *Boemig pf.* at 5.

10 V.S.A. § 6086 (a) (1)(D): Floodways

78. The Project site is well outside of the 100-year floodway and outside of the floodway fringe. *Id.*; *exh. VY-1 (Pet. exh. PB-3)*.

10 V.S.A. § 6086 (a) (1)(E) and (F): Streams and Shorelines

79. The Project as proposed will have no impact on the natural condition of the Connecticut River or its shoreline. This finding is supported by findings 80-84, below.

80. The closest stream or river shoreline is the Connecticut River, which is located more than 100 feet from the Project. *Boemig pf.* at 6.

81. No construction will occur within 100 feet of, or within, the Connecticut River. *Id.*

82. The Project will not have an adverse effect on the public's access to the river, since it in no way changes access to the river in the area of the Station. *Id.*

83. The Project will only be marginally visible from the Connecticut River because it will be largely screened from view by existing vegetation along the river bank. *Id.*

84. The visual character of the Project site will be in keeping with the industrial nature of the site. *Id.* at 11.

10 V.S.A. § 6086 (a) (1)(G): Wetlands

85. Based on a review of the National Wetlands Mapping and field observations, there are no significant wetlands in the area of the Project. Boemig pf. at 6; exh. VY-1 (Pet. Exh. PB-4).

10 V.S.A. § 6086 (a) (2): Water Availability

86. The Project will not change in any way the Station's present use of water or water-conservation measures; the Station will continue to recirculate the same amounts of water used to generate electricity and to cool the reactor. Boemig pf. at 7.

10 V.S.A. § 6086 (a) (3): Burden on Existing Water Supply

87. The Project will not change in any way the Station's present use of water or water-conservation measures. Id.

10 V.S.A. § 6086 (a) (4): Erosion Control

88. The Project as designed will not result in unreasonable soil erosion or reduce the ability of the land to hold water. This finding is supported by findings 89 through 94, below.

89. The Project site is relatively flat, and there are no drainage ways and streams around the site. Id.

90. Erosion control will be accomplished through the use of silt fences and haybale dikes as shown on the Project plans. Id.

91. An erosion-control plan will be included in the Project's construction specifications. Id.

92. Because the erosion-control plan will prevent the discharge of sediment to the Connecticut River, the Project will not result in any dangerous or unhealthy situations downhill or downstream of the Station. Id. at 8.

93. Stormwater from the Project has been evaluated and determined to be consistent with the State's design practices and standards; new impervious surface will be limited to the 2,240-square-foot Hydrogen Storage Area, the 600-square-foot Oxygen Storage Alternate Site, and the 29,166-square-foot Project Access Road. Id. at 4.

94. A stormwater permit is not required for the Project because total impervious area created is approximately 0.73 acres, which is below the minimum jurisdictional requirement of one acre for a Stormwater Discharge Permit from the Vermont Agency of Natural Resources ("VANR"). Id.

10 V.S.A. § 6086 (a) (5): Transportation

95. The Project will not cause unreasonable congestion or unsafe conditions with respect to the only applicable transportation facilities: local highways. This finding is supported by findings 96 through 98, below.

96. SVE Associates evaluated the impact on traffic of the Project. *Id.* at 8; exh. VY-1 (Pet. exh. PB-5).

97. The traffic-evaluation study concluded that the Project will have no adverse impact on existing traffic conditions. Boemig pf. at 8.

98. The general levels of service for all involved roads are acceptable and are the same for the build and no-build scenarios. *Id.*

10 V.S.A. § 6086 (a) (6): Educational Services

99. The Project will have no impact on educational services. Boemig pf. at 9.

10 V.S.A. § 6086 (a) (7): Municipal or Governmental Services

100. The Project will have no impact on the ability of the Town of Vernon to provide municipal services. This finding is supported by findings 100 through 106, below.

101. The Project has been reviewed with the Vernon Volunteer Fire Department Chief and the Vernon Selectboard. *Id.*

102. The Vernon Volunteer Fire Department has determined that it can provide adequate fire protection services to the Project site without unduly burdening the Department and Vermont Yankee will train the Department's members in suppression and extinguishing techniques as part of its internal training program. *Id.*; exh. VY-1 (Pet. exh. PB-6).

103. On December 7, 2000, the Vernon Selectboard passed a resolution finding that the Project will not interfere with the orderly development of the region and will not burden municipal services. Boemig pf. at 9; exh. VY-1 (Pet. exh. PB-7).

104. Vermont Yankee proposes no new road construction for the Project, other than the Project Access Road. Boemig pf. at 10.

105. The Town of Vernon will not be required to provide any additional road-maintenance services as a result of the Project. *Id.*

106. The local rescue service, Rescue, Inc., has reviewed the Project and determined that it can adequately provide rescue services to the Project. Id.; exh. VY-1 (Pet. exh. PB-8).

10 V.S.A. § 6086 (a) (8): Aesthetic Impact, Historical Sites and Natural Areas

107. The Project will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites or rare and irreplaceable natural areas. This finding is supported by findings 108 through 126, below.

108. The Project site is a flat, grassy and overgrown area characterized by brush, scrub oak, poplar and white pine. Boemig pf. at 10.

109. Only a few of the white pine will be removed to accommodate the Project. Id.

110. No new landscaping is planned except minor regrading and repair of lawns. Id.

111. The Project will create a total impervious area of 32,006 sq. ft., and the approximate total area disturbed by the Project is 67,500 sq. ft. with a total height approximately 15 feet above grade. Id.

112. There is a buffer of existing large coniferous and deciduous trees between Vernon Village and the Project. Id. at 11.

113. These existing large trees will be retained. Id.

114. The Project will be marginally visible from Governor Hunt Road during winter months. Id.

115. The Project will be protected from view from the Connecticut River and east by the existing vegetated buffer along the river bank; it may be marginally visible from the Connecticut River but is consistent with the industrial context of the Project site. Id.

116. No new exterior lighting is planned for the Project except for the installation of six shielded metal-halide lights that will direct light downward from five, fourteen-foot stanchions; the lighting is required for maintenance, operations and security purposes. Id.

117. The new electrical-power supply will be buried underground from an existing supply source north of the cooling towers to the Project site, just inside the OCA fence on Vermont Yankee's lands; telephone cables originating in a similar location will be routed in a conduit in the same trench as the electrical source to the Project site. Id. at 12.

118. In general, the Project fits in the context of the area, taking into account the Station's existence, the nature of the Project surroundings, the Project's design, the Project's visibility, and the Project's impact on open space in the area. Id. at 12-13.

119. The Project does not violate a clear, written community standard intended to preserve the aesthetic and scenic or natural beauty of the area, as it complies with the scenic resources policies of the Vernon Town Plan and the Windham Regional Plan. Id. at 13-14.

120. Taking into account the visual dominance of Vermont Yankee's Station and the developed character of the nearby area, the Project will not offend the sensibilities of the average person. Id. at 13.

121. Vermont Yankee has taken generally available mitigating steps to improve the harmony of the proposed Project with its surroundings, including maintaining the existing landscaping, preserving as much of the buffer of existing large trees surrounding the Project site as possible, and limiting the lighting to six shielded metal-halide lights that will direct light downward. Id. at 11, 14.

122. Based on review of the VANR Significant Habitat Map, dated April 13, 1997, there are no state-designated or determined natural/fragile areas in the vicinity of the Project. Boemig pf. at 14; exh. VY-1 (Pet. exh. PB-9).

123. The Project will visually be considered part of the existing power-plant facility and will not significantly change the character of the area. Boemig pf. at 14.

124. Existing vegetation will act as screening from other buildings in the area, especially during summer months. Id.

125. The site of the Project was significantly disturbed during the construction of the Station in the early 1970s. Id. at 15; exh. VY-1 (Pet. exh. PB-10).

126. Because the Station's construction in the early 1970s substantially disturbed the site in which the access-road and bulk-gas storage and supply facilities will be built, no further archeological review of the Project site has been recommended. Boemig pf. at 15; exh. VY-1 (Pet. exh. PB-10).

10 V.S.A. § 6086 (a) (8)(A): Necessary Wildlife Habitat and Endangered Species

127. The Project will not impact any necessary wildlife habitat or endangered species sites. There are no significant habitats of rare plants or animals at or near the Project site. Boemig pf. at 15; exh. VY-1 (Pet. exh. PB-9).

128. The proposed Project is in an area that is currently maintained partly as a lawn and partly with secondary growth of scrub oak, white pine and poplar trees that surround the Station. Boemig pf. at 15.

10 V.S.A § 6086 (a) (9)(K): Public Investment

129. The Project will not unnecessarily or unreasonably endanger the public or quasi-public investments in any governmental public utility facilities, services, or lands, or materially jeopardize or interfere with the function, efficiency, or safety of, or the public's use or enjoyment of or access to such facilities, services, or lands. This finding is supported by findings 130 through 134, below.

130. The only significant impact on public investment will be on Vermont Yankee's Station. Boemig pf. at 16.

131. The Project's construction and operation will not adversely affect the State of Vermont's or Vernon's investments in highways. Id.

132. The Project is located approximately 2,500 feet away from the New England Central Railroad mainline and will not affect that facility. Id.

133. The Project will have no effect on the Connecticut River as it will be located more than 100 feet from the river, its existence has no effect on access to or use of the river, and discharges caused by construction operation on the Project will be to the ground, not the river. Id.

134. The Project is located approximately 1,250 feet from the hydroelectric station at the Vernon dam and will have no effect on that hydroelectric station. Id.

10 V.S.A. § 1424a(d) Outstanding Resource Waters

135. The proposed project will not affect any Outstanding Resource Waters of the state, as identified by the Water Resources Board. Boemig pf. at 2-3; exh. VY-1 Stip (Pet. exh. PB-2).

Executive Order 80-52: Agricultural Resources

136. The Project will not eliminate or significantly interfere with agricultural activities on productive agricultural lands or reduce the potential of primary agricultural soils, taking into

account the location of the Project, the existing terrain and soil conditions, the lack of feasible alternatives to the Project and the mitigation efforts that will be implemented at the Project site. This finding is supported by findings 137 through 142, below.

137. The overall goal of Executive Order 80-52 is to ensure that development requiring state permits will not eliminate or significantly interfere with agricultural activities on productive agricultural lands or reduce the potential of primary agricultural soils, taking into account whether there is a feasible and prudent alternative and whether the project has been planned to minimize its effect on such lands. Boemig pf. at 16-17.

138. Based on a review of the Soil Conservation Services Soil Survey of Windham County and Agricultural Value Group for Soils within Windham County, the Project site is located in an area that is shown as having state-wide significant agricultural soils. *Id.* at 17.

139. The Project site is not presently an agricultural use, and only approximately 0.73 acres of the site will be covered with impervious structures and therefore no longer available for future agricultural use. *Id.*

140. It is the position of the Vermont Department of Agriculture that, in light of the comparatively small size of the Project relative to the Vermont Yankee site, it is unlikely that the Project would significantly affect primary agricultural soil. *Id.*

141. The Project site is currently maintained partly as lawn and partly with secondary growth of scrub oak, white pine, and poplar trees. *Id.* at 15.

142. Vermont Yankee has reviewed alternatives to the Project site and concluded that there is no feasible and prudent alternative that will meet its needs and be cost-effective. *Id.* at 17.

30 V.S.A. § 248 (b)(7): Vermont Electric Energy Plan

143. Vermont's Electric Energy Plan, dated December 1994, does not specifically mention the Project but in general treats Vermont Yankee as a committed resource and encourages Vermont's utilities to minimize their cost of service. Leach pf. at 16.

144. The Electric Energy Plan's considerations do not apply to the type of bulk-gas storage facility proposed. Sherman pf. at 8.

III. Conclusion

Based upon all of the above evidence, the Project will promote the general good of the state.

To the extent that these findings are inconsistent with any proposed findings submitted by the parties to this case, such proposed findings are denied.

Dated at Montpelier, Vermont, this 25th day of June, 2001.

s/Peter B. Meyer

Peter B. Meyer
Hearing Officer

III. ORDER

IT IS HEREBY ORDERED, ADJUDGED AND DECREED by the Public Service Board of the State of Vermont that:

1. The findings and conclusions of the Hearing Officer are adopted.

2. The construction and use by Vermont Yankee Nuclear Power Corporation ("Vermont Yankee") of a bulk-gas storage facility (and associated facilities), to supply hydrogen and oxygen to its existing electric-generation facility in the Town of Vernon, Vermont (the "Project") to be used for existing purposes and to allow Vermont Yankee to introduce "Hydrogen Water Chemistry" to the station's reactor water, which when combined with noble metals, reduces "Intergranular Stress Corrosion Cracking" in the reactor vessel and recirculation pipes, will promote the general good of the State of Vermont in accordance with 30 V.S.A. § 248, provided that Vermont Yankee complies with the following conditions:

a. Vermont Yankee shall file copies of all certifications, permits and other approvals required for the Project not previously filed with the Board, including but not limited to construction-plan approval from the Department of Labor and Industry; and

b. Vermont Yankee shall comply with the erosion-control plan described in its filing.

3. The attached Certificate of Public Good shall issue.

Dated at Montpelier, Vermont, this 27th day of June, 2001.

<u>s/Michael H. Dworkin</u>)	PUBLIC SERVICE
)	
)	
<u>s/David C. Coen</u>)	BOARD
)	
)	OF VERMONT
<u>s/John D. Burke</u>)	

OFFICE OF THE CLERK

FILED: June 27, 2001

ATTEST: s/Susan M. Hudson

Clerk of the Board

NOTICE TO READERS: This decision is subject to revision of technical errors. Readers are requested to notify the Clerk of the Board (by e-mail, telephone, or mail) of any technical errors, in order that any necessary corrections may be made. (E-mail address: Clerk@psb.state.vt.us)

Appeal of this decision to the Supreme Court of Vermont must be filed with the Clerk of the Board within thirty days. Appeal will not stay the effect of this Order, absent further Order by this Board or appropriate action

by the Supreme Court of Vermont. Motions for reconsideration or stay, if any, must be filed with the Clerk of the Board within ten days of the date of this decision and order.