STATE OF VERMONT
PUBLIC SERVICE BOARD

Docket No. 7456

Petition of Vermont Gas Systems, Inc. for a certificate of public good, pursuant to 30 V.S.A. § 248(j), authorizing the rebuild and enclosure of an existing pressure-regulation station and the replacement of an existing communications building on Gorge Road in the City of Winooski, Vermont	)	Hearing at Montpelier, Vermont March 16, 2010

Order entered: 9/3/2010

PRESENT: June E. Tierney, Esq., Hearing Officer

APPEARANCES: Jeanne Elias, Esq.
for Vermont Department of Public Service

John H. Marshall, Esq.
for Downs Rachlin Martin, PLLC

David Englander, Esq.[1]
for Vermont Agency of Natural Resources

I. INTRODUCTION

This case involves a petition filed by Vermont Gas Systems, Inc. ("VGS," or the "Company") requesting a certificate of public good ("CPG") under 30 V.S.A. § 248(j). VGS seeks authorization to rebuild and enclose the existing pressure-regulation station and replace the existing communications building at its Winooski Gate Station in Winooski, Vermont (the "Winooski Station" or "Station"), (collectively referred to herein as the "Project"). In this Proposal for Decision, I recommend that the Vermont Public Service Board (the "Board")

1. Party of Record, but did not attend Hearing.

conclude that the proposed Project will be of limited size and scope; that the public interest is satisfied by the procedures authorized by 30 V.S.A. 248(j); and that a CPG be approved for the proposed Project because it will promote the general good of the state.

II. PROCEDURAL MATTERS

On May 23, 2008, VGS filed a petition, prefiled testimony, proposed findings, and a proposed order (along with a proposed CPG) with the Board pursuant to the requirements of 30 V.S.A. § 248(j)(2). At that time, copies of these materials were also duly served upon the Vermont Department of Public Service (the "Department" or "DPS") and the Vermont Agency of Natural Resources ("ANR").

On June 27, 2008, after initial review by Board staff, the Clerk of the Board sent a letter to VGS stating that there was insufficient information to process the petition pursuant to Section 248(j) and requesting additional information from the Company.

On July 9, 2008, VGS made a supplemental filing in response to the Board's information requests.

On July 31, 2008, upon further review by Board staff, the Clerk of the Board sent a memorandum to VGS requesting additional information about the Company's plans for conducting a subsurface investigation to determine whether the Project presents any ground contamination issues that may require remediation measures.

On August 7, 2008, VGS completed its petition for processing under 30 V.S.A. § 248(j) by filing the requested information concerning potential ground contamination remediation measures.

Notice of the filing in this docket was sent on August 22, 2008, to all parties specified in 30 V.S.A. § 248(a)(4)(C)) and abutting landowners. The notice stated that any party wishing to submit comments as to whether the petition raises a significant issue with respect to the substantive criteria of 30 V.S.A. § 248 must file the comments with the Board on or before September 23, 2008. Notice of the filing, with a request for comments on or before September 23, 2008, was also published in the *Burlington Free Press* on August 27 and September 2, 2008.

No comments were received from any interested persons or members of the public.

On September 23, 2008, ANR filed a letter with the Board stating that it had not identified any issues of concern related to the substantive criteria of 30 V.S.A. §248(b)(5).[2]

On September 25, 2008, the Department filed a letter with the Board expressing numerous concerns with the Petition. The Department questioned the appropriateness of reviewing the Project pursuant to the streamlined procedures of Section 248(j) and suggested that the Project be deferred until the completion of the Board's pending review of VGS's 2008 Integrated Resource Plan in Docket 7459 (the "2008 IRP"). Specifically, the Department indicated that the Petition raised substantial issues with regard to the following Section 248(b) criteria: orderly development (§ 248(b)(1)); need for present and future demand for service (§ 248(b)(2)); system stability and reliability (§ 248(b)(3)); economic benefit to the State and its residents (§ 248(b)(4)); natural environment/public health (§ 248(b)(5)); and least-cost integrated planning (§ 248(b)(6)).[3]

On October 20, 2008, VGS filed a letter with the Board responding to the concerns raised by the Department in its letter of September 25, 2008.[4] VGS opposed the Department's suggestion that this matter be stayed pending the final outcome of the 2008 IRP review in Docket 7459. Furthermore, the Company asserted that, contrary to the Department's suggestion, the Project raised no concerns under the Section 248(b) criteria. Finally, VGS offered to "work with the DPS to ensure that its questions are answered."[5]

On November 17, 2008, I convened a status conference in this matter. At that hearing, the Department agreed to reconsider its objection to proceeding pursuant to the streamlined § 248(j) review process.

On December 8, 2008, the Department filed a letter with the Board in which it withdrew its objection to proceeding under Section 248(j) as well as its suggestion of staying this docket pending the outcome of the 2008 IRP review in Docket 7459.[6]

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2. *Letter from Michael Steeves, Esq., on behalf of ANR, to Susan M. Hudson,* dated September 23, 2008.
3. *Letter from Jeanne Elias, Esq., on behalf of DPS, to Susan M. Hudson*, dated September 25, 2008.
4. *Letter from Ms. Eileen Simollardes, on behalf of VGS, to Susan M. Hudson,* dated October 20, 2008.
5. *Id.* at 1.
6. *Letter from Jeanne Elias, Esq., on behalf of DPS, to Susan M. Hudson*, dated December 8, 2008.

On January 12, 2009, the Department filed a letter with the Board stating that the parties had agreed to proceed with informal discovery and would file a status report on or before February 17, 2009.[7]

On September 3, 2009, the Department filed a letter with the Board advising that the informal discovery process had failed to yield a settlement. Included with that letter was a proposed litigation schedule to which the DPS and VGS had consented.[8]

On September 9, 2009, the Department filed a letter with the Board to amend the schedule that it proposed for adoption in its letter of September 3, 2009. The proposed amendment was requested after further consultation with ANR concerning possible dates for scheduling a technical hearing.[9]

On September 10, 2009, I issued an Order approving the proposed schedule.

On January 22, 2010, VGS filed a letter seeking an amendment to the procedural schedule and asking to set a technical hearing date.[10]

On January 28, 2010, the DPS filed a letter consenting to the Company's request to amend the procedural schedule.[11] That same day, I issued an Order approving the amendment to the procedural schedule.

On February 19, 2010, VGS filed a request seeking postponement of the technical hearing. VGS represented that the DPS and ANR had consented to the extension request.[12]

On February 22, 2010, I issued an Order setting the technical hearing date for March 16, 2010.

On March 12, 2010, VGS filed a letter stating that VGS and the DPS had agreed to waive cross-examination of each other's witnesses and were prepared to stipulate to the admission into

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7. *Letter from Jeanne Elias, Esq., on behalf of DPS, to Susan M. Hudson*, dated January 12, 2009.
8. *Letter from Jeanne Elias, Esq., on behalf of DPS, to Susan M. Hudson*, dated September 3, 2009.
9. *Letter from Jeanne Elias, Esq., on behalf of DPS, to Susan M. Hudson*, dated September 9, 2009.
10. *Letter from Megan R. Ludwig, Esq., on behalf of VGS, to Susan M. Hudson,* dated January 22, 2010.
11. *Letter from Jeanne Elias, Esq., on behalf of DPS, to Susan M. Hudson*, dated January 28, 2010.
12. *Letter from Megan R. Ludwig, Esq., on behalf of VGS, to Susan M. Hudson,* dated February 19, 2010.

evidence of several joint exhibits containing the entire discovery record developed by these two parties in this case.[13]

On March 16, 2010, I convened a technical hearing in this matter.

On April 9, 2010, the DPS and VGS filed a document identified as a Joint Stipulation of Facts (the "Stipulation").[14] That same day, VGS filed a Proposal for Decision ("VGS PFD") and the Department filed a brief ("DPS Brief").

III. FINDINGS

Based upon the petition and accompanying documents, I hereby report to the Board the following findings of fact in accordance with 30 V.S.A. § 8.

General Findings

Description of the Project

1. VGS is a company that transmits, distributes and sells natural gas to the public in Vermont. Pet. at 1.

2. The existing Winooski Station located on Gorge Road in Winooski was originally constructed in 1965 as part of VGS's initial 10-inch pipeline system. The Station currently serves customers in the areas of Burlington, South Burlington, Essex and Williston. Teixeira pf. at 5.

3. The Project for which VGS seeks approval consists of: (a) rebuilding the existing pressure-regulation station by stripping the Winooski Station back to the inlet and outlet piping and replacing the heater, filter, valves, pressure-reducing regulators, relief valves and all associated station piping; (b) enclosing the pressure-regulation equipment, which is currently out in the open, within a new metal building (the "Enclosure Building") to protect the equipment

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13. *Letter from Megan R. Ludwig, Esq., on behalf of VGS, to Susan M. Hudson,* dated February 16, 2010.

14. The DPS and VGS agreed to file the Stipulation as a condition of my granting the request of these parties to admit into evidence the entire discovery record of this case. Tr. 3/16/10 at 5-11 and 162 (Elias and Ludwig). At the technical hearing, VGS and the DPS agreed that there were no facts in dispute in this case. Tr. 3/16/10 at 9 (Elias and Ludwig). I hereby admit the Stipulation into evidence, subject to a 10-day comment period for ANR, the only other party in this case. ANR did not attend the technical hearing and neither signed the Stipulation nor filed a brief in this case. ANR's 10-day period for filing any comments objecting to the admission of the Stipulation into evidence shall begin to run from the date this Proposal for Decision is circulated to the parties for review and comment.

from the elements and to reduce ambient noise for neighbors; (c) replacing the existing heater with a boiler and tube in-shell, heat-exchanger system to minimize noise and improve thermal efficiency of the Station; (d) dismantling the Station's existing communications building; and (e) moving into the Enclosure Building the Station's SCADA[15] gear, telecommunications equipment, the new boiler, and a new propylene-glycol pump skid. Teixeira pf. at 3-4.

4. The Project is designed to operate and satisfy the total gas demand in the area to be served by the Winooski Station[16] with only one regulator run[17] operating. Therefore, the proposed Project entails constructing two runs of regulator piping that are intended to be redundant with each other. One run will operate in the ordinary course of business (the "working regulator"), while the second run would only be used in the event of an equipment failure on the primary run or during maintenance periods (the "monitor regulator").[18] Teixeira pf. at 6.

5. When construction of the Project is complete, the maximum total capacity of the Winooski Station's regulator piping will increase from its present level of approximately 2,400 mcfh[19] to a maximum total capacity of approximately 5,000 mcfh (2,500 mcfh per regulator run). Pet. at 1; Teixeira pf. at 6.

6. VGS also proposes to replace the Winooski Station's existing axial flow regulators with top-entry regulators, which are commonly installed within buildings and allow maintenance of the regulator without requiring that the piping be "broken" to access the internal working parts of the regulator. The axial flow regulators that are being replaced will be kept to provide spare parts for other gate stations. Teixeira reb. pf. at 7-8; tr. 3/16/10 at 37 (Teixeira).

7. The Project further includes replacing several pipeline bends at the Winooski Station, thus allowing passage of an internal line-inspection device as part of the Company's Integrity

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15. The acronym SCADA stands for "supervisory control and data acquisition."

16. At present, this area is served by two regulator stations – the Winooski Station as it now exists and the Essex Station, which the Company plans to retire once the Project is constructed. See *infra* findings 13 through 22, below.

17. A "regulator run" consists of a configuration of pipes that is connected to a device that monitors and regulates the pressure of natural gas flowing through a gate station such as the Winooski Station.

18. The monitoring regulator would effectively shadow the operations of the working regulator, but the monitoring regulator would not actively regulate gas flow at the Winooski Station unless the working regulator experienced a failure or were taken off-line for servicing.

19. Mcfh stands for "million cubic feet per hour" of natural gas pressure.

Management Program. VGS also would construct the risers needed for inserting and removing internal inspection devices; these will facilitate future internal inspection of VGS's 10-inch transmission line. Teixeira pf. at 6.

8. At present, the Winooski Station contains a structure that houses communications equipment. That structure is nine feet high, seven feet wide and eight feet long. Exh. Board-3.

9. The Project's design calls for the construction of the Enclosure Building to house all three major components of the Station: the communications equipment, all the pressure-regulation equipment and the boilers. The Enclosure Building would be 13 feet high from ground level to the roof peak; 32 feet wide and 44 feet long. Exh. Board-3.

10. The Enclosure Building will be larger than the existing building that presently houses the communications equipment at the Winooski Station, but the footprint of the Project will remain within the existing easement area of the Station. With construction of the Project, the existing fence lines will move from 50 feet by 50 feet to 60 feet by 70 feet to allow ingress and egress from the new buildings. Teixera pf. at 7; exh. VGS-1; exh. VGS-4; exh. Board-3.

11. The estimated cost of the Project is $1,054,785. Stipulation at ¶ 37.

12. VGS anticipates constructing the Project within the 2010 construction season, with the expectation of placing the Project in service by November 1, 2010. Tr. 3/16/10 at 12 (Teixeira).

Removal of the Essex Station

13. The Winooski Station is located one-half mile from VGS's Essex/South Burlington pressure-regulation station, which is on College Parkway in Colchester, Vermont (the "Essex Station"). These two regulator stations are joined by a transmission pipeline segment. Tr. 3/16/10 at 63 (Teixeira); Teixeira pf. at 4.

14. The Essex Station is over 40 years old. After the Winooski Station is rebuilt, VGS plans to take out of service and retire the Essex Station. Teixeira pf. at 3; Teixeira reb. pf. at 11.

15. When VGS retires the Essex Station, all above-ground piping, the fence and the small communication equipment building (the only building on site) will be removed. The concrete barriers that were installed to protect the station from contact with vehicles will also be removed. Exh. Board-5.

16. When construction is complete, no above-ground facilities will remain at the Essex Station site. All piping connections with the active transmission and distribution systems will be removed. Exh. Board-5.

17. All of the underground gas piping that will be abandoned on site will be disconnected from all sources and supplies of gas, purged of natural and then the ends of the pipes will be sealed. Exh. Board-5.

18. The process for retiring the Essex Station will be performed in accordance with Department of Transportation Regulation D.O.T. Part 192.727 – "Abandonment or Deactivation of Facilities." Exh. Board-5.

19. No hazardous materials were used at the Essex Station during its operation. The Essex Station was used to reduce the pressure of natural gas from transmission-line pressure to distribution-system pressure. This process involved heating natural gas to prevent freezing of the equipment. To this end, a line heater was used at the Essex Station that contained a maximum of 235 gallons of a heater fluid mix of water and propylene glycol – a non-hazardous anti-freeze. Exh. Board-1.

20. VGS will retain an environmental waste disposal firm to dispose of this heater fluid. Exh. Board-1.

21. The Company's records show that over the last 40 years, there have been no spills at the site beyond a leak of the line-heater fluid in 2003. At that time, the crushed stone ground-cover affected by the leak was removed. Exh. Board-1.

22. There are no water bodies within 600 feet of the Essex Station. Exh. Board-1 at 2.

Discussion

The Company's plan for retiring the Essex Station does not provide for a subsurface investigation such as soil and water sampling to determine whether there are any ground contaminants present at that site. There are no water bodies within 600 feet of the Essex Station, and there is no known history of spills at the site, nor were any hazardous materials used there over the course of the last 40 years. Under these circumstances, I conclude that there is no need for the Board to require a subsurface investigation at the Essex Station as a condition for regulatory approval of the Project.

Statutory Findings

Orderly Development of the Region

[30 V.S.A. § 248(b)(1)]

23. 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. Teixeira pf. at 8; findings 24 through 32, below.

24. VGS provided copies of the Project plans to the Chittenden County Regional Planning Commission ("CCRPC"), the Winooski City Council and the Winooski Planning Department. Teixeira pf. at 8.

25. The CCRPC sent a letter to VGS stating that the Project raised no concerns. Teixeira pf. at 8; exh. VGS-2.

26. VGS met with the Winooski Planning Department. During that meeting, no concerns were raised about the Project. Teixeira pf. at 8.

27. The proposed Project consists of a rebuild of an existing pressure-regulation station within an existing easement area that is already disturbed. Teixeira pf. at 8.

28. The completed Project will not necessitate any system improvements or reinforcement outside of the proposed Project. Stipulation at ¶ 43.

29. VGS has no plans for gas main looping within a one-mile radius of either the Winooski Station or the Essex Station. Stipulation at ¶ 44.

30. The Project will have no impact upon the Company's multi-year expansion plans. Tr. 3/16/10 at 64 (Teixeira).

31. Construction of the Project will not restrict VGS's growth or otherwise have a negative effect upon the Company's ability to expand its service territory within Chittenden County. Tr. 3/16/10 at 72-73 (Teixeira).

32. The Project will neither encourage nor deter the expansion of VGS's service territory beyond Chittenden County. Tr. 3/16/10 at 71-72 (Teixeira).

Discussion

The evidentiary record demonstrates that the Project will not unduly interfere with the orderly development in the affected region.[20] The evidence further shows that VGS took the ordinary and accepted steps in a Section 248(j) proceeding to notify the appropriate planning officials in the areas affected by the Project, including the Chittenden County Regional Planning

20. *See* Finding 23, above.

Commission.[21] None of these organizations raised any concerns about the implications of the Project for the orderly development of the region.[22]

The Department contends that the Project "may unduly interfere with the orderly development of the region because it negatively impacts the options for additional system expansion in the vicinity of the project through the elimination of the Essex station and the downgrading of a section of transmission pipe."[23] The Department therefore recommends that the Project be deferred until VGS has an IRP in place that addresses "long range planning, and system expansion."[24] Alternatively, the Department recommends as a condition of approval of the Project that the Board require VGS to "provide additional detailed information to the Board comparing the status quo, to the upgrade of both stations, to its proposed project relative to their impacts on system expansion and regional growth."[25]

As an initial matter, it bears noting that the Department's position departs from the Board's customary analysis under Section 248(b)(1), which typically focuses upon undue interference with orderly regional development, and not the adequacy of system expansion planning. That said, at the technical hearing, VGS witness Teixeira testified — without contradiction— about the reasons why the Project would neither encourage nor deter the Company's growth either within or beyond Chittenden County.[26] For instance, Mr. Teixeira stated that an expansion of service into Addison County would require the construction of a much larger transmission line.[27] In turn, the Department acknowledged at the technical hearing that it has an opportunity to promote the goal of natural gas service expansion in VGS's pending 2008 IRP proceeding in Docket 7459, and that there will be no grave or detrimental consequences if this Project is constructed before the IRP review is completed.[28]

Accordingly, I perceive no basis related to Section 248(b)(1) for recommending that the Board defer approval of a CPG for the Project until the Company has developed an IRP that addresses the concerns raised by Department in this docket. The Department further

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21. *See* Findings 24 and 26, above.
22. *See* Findings 25 and 26, above
23. DPS Brief at 4.
24. *Id*. at 5.
25. *Id*.
26. Tr. 3/16/10 at 70-72 (Teixeira).
27. Tr. 3/16/10 at 71 (Teixeira).
28. Tr. 3/16/10 at 128-129 (Mertens).

recommends as a condition of approval that the Board require VGS to provide additional information in this proceeding relative to the Project and its impact on system expansion and regional growth. As I have determined that the Company has demonstrated that the Project will not unduly interfere with the orderly development of the region, as required under Section 248(b)(1), I do not recommend that the Board adopt this condition.

Need For Present and Future Demand for Service

[30 V.S.A. § 248 (b)(2)]

33. The Project is required to meet the 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. Teixeira pf. at 9; findings 34 through 80, below.

34. The Winooski Station currently serves the areas in and around Burlington, South Burlington, Essex and Williston. Teixeira pf. at 5.

35. After construction of the Project, the Winooski Station will also serve the areas of Colchester, Essex Junction and Jericho (the "Area of Need"). Teixeira pf. at 5.

36. The Winooski Station presently serves 7,000 VGS customers. This represents approximately 11 percent of the Burlington-area system demand for service. Stipulation at ¶ 1; Mertens pf. at 8.

37. The Essex Station presently serves 21,000 customers in Colchester, Essex Junction and Jericho. This represents approximately 37 percent of the Burlington-area system demand for service. Stipulation at ¶ 1; Mertens pf. at 8.

38. The proposed Project will combine the operations of the two existing regulator stations to serve 28,000 customers from the Winooski Station, which would represent approximately 48 percent of the Burlington-area system demand for service. Stipulation at ¶ 1; exh. Joint-5 at 4; Teixeira reb. pf. at 6; tr. 3/16/10 at 21 (Teixeira).

39. VGS annually updates its system analysis model to review the need for system reinforcements to stay current with customer growth and gas load changes in its distribution system. Stipulation at ¶17; tr. 3/16/10 at 47 (Teixeira).

40. Using the high growth numbers from the Company's 2008 IRP, the design demand at the Winooski Station in 10 years would be 1,620 mcfh, and 2,185 mcfh in 20 years. Once the

Project is completed, the ordinary, day-to-day capacity for the rebuilt Winooski Station using one regulator run will increase from the existing capacity of 1,200 Mcfh to 2,500 Mcfh. Stipulation at ¶ 2.

Need for the Project

41. A pressure-regulation station is a necessary component of a gas distribution system. Without a pressure-regulation station in this area or substantial additions to the distribution system to serve this area from an alternate pressure-regulation station, customers in this portion of VGS's system could not receive reliable natural gas service, nor could new customers be added to this area. Teixeira pf. at 9.

42. The Project is necessary in order to ensure that the 28,000 customers presently served by the Winooski Station and the Essex Station continue to receive reliable service from VGS. Tr. 3/16/10 at 21 (Teixeira).

Need to address concerns at the Winooski Station

43. The existing Winooski Station requires significant upgrades to its aging equipment. Stipulation at ¶ 51.

44. The Winooski Station experiences gas velocities that rise in excess of the standards recommended as good engineering practices. Stipulation at ¶¶ 30-31.

45. The excessive gas velocities are caused by the size of the Winooski Station's piping, which is undersized for today's peak flow conditions. Stipulation at ¶ 51.

46. The consequences of gas velocities exceeding good engineering practices can be erosion of the pipe wall, excessive noise and vibrations, reduction in gas measurement accuracy and damage to measurement equipment. Stipulation at ¶ 32.

47. Excessive gas velocities also have the potential to result in gate station equipment failures. For example, VGS has had to replace a number of valves and three meters at the Essex Station that were likely destroyed at least in part due to the high gas velocity that the facility experiences. Tr. 3/16/10 at 49-50 (Teixeira).

48. High gas velocities experienced at other stations have been known to cause piping nipples[29] to break off. Tr. 3/16/10 at 50 (Teixeira).

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29. A "piping nipple" is a pipe coupling consisting of a short piece of threaded tubing.

49. The Gas Technology Institute recommends a station piping design that keeps gas velocities below 100 feet per second as a matter of good engineering practice. This velocity level is also typically recommended by consulting engineers when designing station piping. Stipulation at ¶ 30.

50. At present, the calculated velocity at the Winooski Station at the current design load of 290 mcfh is 221 feet per second. Stipulation at ¶ 31.

51. As part of the rebuilt Winooski Station, VGS proposes to install a 95-percent-efficient heater to meet expected consumption. The high-efficiency heater will save an estimated 429 mcfh per year. Stipulation at ¶¶ 52-53.

Need to address concerns at the Essex Station

52. Gas velocities under peak conditions at the Essex Station are currently seven or eight times in excess of good engineering practices. The calculated velocity at the current design load of 975 mcfh at the Essex Station is 742 feet per second. Tr. 3/16/10 at 49 (Teixeira); Stipulation at ¶ 31.

53. Even under normal flow (non-peak) conditions at the Essex Station, velocities exceed 100 feet per second. Tr. 3/16/10 at 49 (Teixeira).

54. VGS does not have an estimate for how long the excessive-velocity condition has existed at the Essex Station or for how many hours it has occurred. However, this condition probably has existed at the Essex Station for a number of years. Tr. 3/16/10 at 50 (Teixeira).

55. As at the Winooski Station, the station piping at the Essex Station is undersized for peak flow conditions. Stipulation at ¶ 51.

56. The Essex Station is also taxed by undersized gas-line filters; during high flow conditions there is nearly a 3 psi drop across the filter — the current design standard is a ½ psi[30] drop across the filter. Without replacement, the pressure drop will continue to increase as gas demand increases. Stipulation at ¶ 51; tr. 3/16/10 at 51 (Teixeira).

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30. The acronym "psi" stands for "pounds per square inch."

57. In addition, with their 3-inch flow characteristics, the existing axial flow valves at the Essex Station suffer a significant droop[31] in outlet pressure on high-flow mornings. Stipulation at ¶ 51.

58. The heater at the Essex Station dates back to 1966, is undersized and has been repaired numerous times. Installation of a new heater would require redesign and reconstruction of the piping layout. A new heater would not fit within the existing footprint. Stipulation at ¶ 46.

59. Taken together, all of the necessary modifications to the Essex Station would inevitably require a complete redesign to that station that would include extensive site work. Stipulation at ¶ 46.

Alternatives to the Project

60. The alternative to the Project proposed by the Department would leave both the Winooski Station and the Essex Station in place and otherwise would call for performing incremental upgrades as necessary (the "DPS Alternative"). Mertens pf. at 10; Mertens sur. pf. at 1.

61. The DPS Alternative would entail upgrading the existing regulator runs at the Essex and Winooski Stations to provide redundancy equivalent to the proposed Project by converting the existing parallel regulators into working and monitor regulator runs. Mertens pf. at 10.

62. Under the DPS Alternative, the existing regulator runs and relief valves at the Essex and Winooski Stations would be replaced. Mertens pf. at 10; exh. DPS-HM-2 at 1.

63. Under the DPS Alternative, motor controls would be installed for the two regulator runs at the Essex andWinooski Stations. Mertens pf. at 10; exh. DPS-HM-2 at 1.

64. The DPS Alternative would further involve replacing the heater at the Essex Station, as well as painting both regulator stations. Mertens pf. at 10; exh. DPS-HM-2 at 1.

65. The DPS Alternative does not address the underlying problem of undersized piping at both regulator stations and does not provide the redundancy and the additional level of safety offered by the Project's configuration. Tr. 3/16/10 at 76-78 (Teixeira).

66. Based on data provided by VGS, the Department estimates that the cost of the DPS Alternative would be approximately $200,000. Mertens pf. at 10.

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31. The term "droop" signifies the change in outlet pressure in a regulator as the flow changes. In a pressure reducing regulator, the outlet pressure drops (or droops) as the flow increases.

67. The $200,000 cost estimate for the DPS Alternative excludes the cost of rebuilding the piping manifolds to add monitor regulators for over-pressure protection and to reduce the gas velocities at the two stations to within a proper design limit. Teixeira reb. pf. at 14; Stipulation at ¶ 48.

68. Rebuilding the piping manifolds is necessary in order to add monitor regulators for over-pressure protection and to reduce the gas velocities at the two stations. Teixeira reb. pf. at 14; finding 63, above.

69. When adjusted to account for rebuilding the piping manifolds, the cost of the DPS Alternative rises to approximately $1,400,000 ($700,000 for each station), excluding the cost of enclosing the pressure-regulation equipment in a building. Teixeira reb. pf. at 14; Stipulation at ¶ 50.

70. A complete upgrade of both existing stations would cost as much as $1,980,000. Teixeira reb. pf. at 15.

71. The Project as proposed, which is estimated to cost $1,054,785, is more cost-effective than either alternative of incrementally upgrading the existing Essex and Winooski Stations ($1,400,000) or rebuilding both stations ($1,980,000). Stipulation at ¶ 37; Teixeira reb. pf. at 15.

72. It is unwise, from a reliability perspective, to wait for a problem to develop before planning a solution for that problem. Teixeira reb. pf. at 8.

Cost efficiencies and other advantages of the Project

73. The Project is likely to produce off-setting cost savings that will inure to the benefit of VGS ratepayers by partially defraying the overall cost of the Project. Among other things, the Project will eliminate the need for, and save ratepayers the cost of, rebuilding the Essex Station in the future. Teixeira pf. at 5; Teixeira reb. pf. at 10; exh. Joint-9 at 12-13.

74. The Project's more efficient design and updated components at the Winooski Station will enhance system reliability and safety. The Project will increase the reliability of VGS's system by incorporating additional redundancy that does not exist under the current configuration of the Winooski Station. Teixeira pf. at 10; Teixeira reb. pf. at 6.[32]

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32. This redundancy is described in greater detail in findings 88 through 101, below.

75. By retiring the Essex Station, VGS will be able to convert the use of the existing, one-half-mile segment of pipe that presently connects the Essex Station and the Winooski Station from transmission piping to distribution piping. This conversion will eliminate the recurring, periodic need for pressure-testing that is required under federal law for transmission facilities, thereby producing estimated savings of between $150,000 to $200,000 every seven years. Tr. 3/16/10 at 46 and 63 (Teixeira); Mertens pf. at 8; Stipulation at ¶ 41.

76. The general practice in the natural gas industry favors the use of the kind of top-entry regulators that have been proposed at Winooski Station as part of the Project. Top-entry regulators have less droop than axial flow regulators, thus requiring less adjustment to minimize the drop in pressure flow between the inlet and outlet pressure at a gate station. Top entry regulators also are more efficient from a maintenance perspective. Rather than separating the piping to access the internal parts as is required for axial flow regulators, top-entry regulators provide access through a top plate, which makes it easier to perform maintenance and to reassemble the unit. Tr. 3/16/10 at 37-39 (Teixeira).

77. The Project will promote system stability because the planned improvements to the SCADA system will allow pressures at the Winooski Station to be adjusted remotely from VGS's operations-control location. This will increase operating flexibility and efficiency because the Company's measurement-control technicians will no longer need to be physically dispatched to adjust operating pressures at the Station, thus facilitating the Company's ability to respond to changing operational conditions at the Station more quickly. Teixeira pf. at 5.

78. Housing the station piping and pressure regulation equipment within the Enclosure Building at the rebuilt Winooski Station will protect these facilities from the wear and tear of exposure to the elements, thereby significantly reducing the need and cost for maintenance activities. Teixeira pf. at 4; Teixeira reb. pf. at 9-11.

79. The Enclosure Building will also enhance security at the Winooski Station, which has been the target of gun shots and other acts of vandalism. Stipulation at ¶ 39; tr. 3/16/10 at 63 (Teixeira); Teixeira reb. pf. at 9; exh. Joint-5 at 6, 10-11 and 13.

80. The construction costs for the Enclosure Building, including the foundation work, amount to approximately 20 percent ($210,000) of the estimated $1,054,785 cost of the Project. Stipulation at ¶¶ 37-38.

Discussion

In this proceeding, VGS seeks approval to rebuild the Winooski Station and to install new equipment in order to modernize a facility that was built in 1965 and to realize operational efficiencies, including the retirement of an equally aged regulation station in Essex that is also in need of significant and costly upgrades and repairs.

Before the Board may approve the proposed Project, Section 248(b)(2) requires a finding that the proposed 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, including but not limited to those developed pursuant to the provisions of sections 209(d), 218c, and 218(b) of this title.

The Board has previously determined that the Section 248(b)(2) criterion may be satisfied with a showing that the project is required "principally as a maintenance activity to replace existing and aged facilities."[33]

According to VGS, the Project is mainly intended to replace two existing facilities that are at least 40 years old by consolidating them into one pressure-regulation station.[34] The Company contends there is a need to modernize these "aged facilities" to upgrade several components and to address known concerns regarding unacceptably high gas velocities, which presently exceed good engineering practices at both the Winooski Station and the Essex Station.[35]

The Department, in turn, maintains the Project is not necessary because current service needs are being met by the two stations in their present configuration, and there is no evidence in the record to suggest that a service disruption is imminent.[36] The Department disputes the need for the Project because there was "no specific analysis conducted by VGS indicating the need to

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33. Docket 7448, *Petition of New England Power d/b/a National Grid, for a Certificate of Public Good, pursuant to 30 V.S.A. § 248(j), authorizing construction associated with the revitalization of its 115 kV and 46/69 kV substations in the Town of Rockingham, Vermont*, Order of 9/19/08 at 7.

34. *See, e.g.*, findings 2 and 4, above. *See also* exh. Joint-9 at 12 ("VGS did not undertake this project as a cost-saving measure. We undertook the project for reliability and system security.")

35. VGS PFD at 18; findings 44 and 52, above.

36. DPS Brief at 8.

begin replacing its 40 plus year-old gate stations."[37] The Department further rejects VGS's contention that the Project is needed to address the excessive gas velocities at the two stations. In support of this position, the Department points out that (1) VGS has not reported any problems at either station stemming from high gas velocity; and (2) there are mitigation measures available "when an existing station begins to exceed desired velocities."[38] Finally, while the Department does not dispute that there are conditions in need of attention at both the Winooski Station and the Essex Station, the Department favors a different solution than the Project. The Department argues that the Company should implement the DPS Alternative, which would only cost approximately $200,000 and contemplates a variety of incremental upgrades, thus preserving the dual configuration of the existing Winooski Station and the Essex Station.[39]

I do not find the Department's arguments in opposition to the need for the Project to be persuasive. While it is true that the present configuration is meeting current service needs, this configuration is also known to be operating under conditions characterized by gas velocity levels that do not comply with good engineering practices. The Department's suggestion that the high-velocity conditions are not presently problematic is undermined by the credible evidence showing that VGS likely has experienced equipment damage at the Essex Station in part due to high gas velocity.[40] In addition, the Department's velocity-mitigation strategy overlooks the fact that the high-velocity conditions are not "beginning" at the Essex Station — they have likely existed there for an extended period of time.[41] The Department further acknowledges that mitigation measures — such as wrapping sound insulation around station pipes to cancel out noise due to high gas velocity — would not address the root cause of the excessive velocity problems.[42] Given these circumstances, I agree with the Company that it is unwise, from a reliability perspective, to wait for these excessive velocity levels to mature into a larger problem before planning for a solution.[43]

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37. DPS Brief at 10.
38. Mertens sur. pf. at 5.
39. Findings 60-64 and 66, above.
40. Finding 47, above; Stipulation at ¶ 33.
41. Finding 54, above.
42. Stipulation at ¶ 36.
43. *See* Teixeira reb. at 15.

In addition to challenging the need for the Project, the Department also questions the cost-effectiveness of the Project as compared to the DPS Alternative.[44] The Department perceives that VGS "has not fully assessed possible alternatives that could meet the current need in a more cost-effective manner."[45] The Department insists that the DPS Alternative is a less expensive option and therefore should be used to incrementally upgrade the two stations.[46]

In turn, VGS opposes the DPS Alternative and argues against relying upon the estimated $200,000 cost of that option.[47] First, VGS maintains that the DPS Alternative would not address the principal deficiencies associated with the existing stations — undersized piping and attendant high gas velocities.[48] Second, the Company points out that the $200,000 figure excludes the significant costs associated with rebuilding the piping manifolds — a key step for improving over-pressure protection and for reducing gas velocities to within a proper design limit at the Winooski Station and the Essex Station.[49] According to the Company, when the costs of rebuilding the piping manifolds are taken into consideration, the DPS Alternative is more reasonably estimated to cost $1,400,000. This estimate is based on the cost of VGS's recently-completed station rebuild in Sheldon, Vermont.[50] The Department counters that the Sheldon rebuild is not an "exact" comparable.[51] The Department, however, did not develop an independent cost study that contradicts the estimates provided by VGS in its testimony, nor does

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44. DPS Brief at 8-9.

45. DPS Brief at 9.

46. Tr. 3/16/10 at 136 (Mertens).

47. While the $200,000 cost estimate originated with VGS, the Company from the outset has maintained that it does not view this estimate as representative of the cost of a true alternative to the Project because that estimate does not reflect the expense of rebuilding the piping manifolds at the two stations. Exh. Joint-9 at 8. Furthermore, VGS contends that the Department's analysis supporting its reliance upon the $200,000 cost estimate reflects incorrect carrying costs and an inappropriate present value cash discount rate. Teixeira reb. pf. at 10-13. The Company also asserts that the DPS Alternative fails to reflect a reasonable calculation of the maintenance expenses associated with retaining both 40-year-old stations. Teixeira reb. pf. at 10-11.

48. Tr. 3/16/10 at 76 (Teixeira).

49. Finding 67, above.

50. Teixeira reb. pf. at 14; tr. 3/16/10 at 41-42 (Teixeira). VGS further contends that the incremental upgrade contemplated by the DPS Alternative is not the true alternative to the Project. Rather, the true alternative to the proposed Project would be to fully rebuild both the Winooski Station and the Essex Station, the cost of which would be approximately $1,980,000. *See* Finding 70, above.

51. Tr. 3/16/10 at 96 (Mertens).

the Department maintain that it has any basis to believe that the Company provided misleading estimates.[52]

On balance, I am persuaded that the Project is more cost-effective than the DPS Alternative. First, the credible evidence in the record shows that the DPS Alternative is more likely to cost $1,400,000 to implement, and not $200,000.[53] By comparison, the Project's estimated cost is $1,054,785. Second, the DPS Alternative does not fully reflect the costs associated with leaving both stations in place.[54] Among these costs is the fact that the Essex Station will eventually require rebuilding.[55] The Project will spare ratepayers this future expense. The DPS Alternative also fails to acknowledge that if the Project is constructed, the Company — and therefore ratepayers — will save the significant and recurring pressure-testing costs[56] attendant to maintaining the existing one-half-mile segment of transmission pipe that presently connects the Essex Station and the Winooski Station.[57]

In testing the Company's case for compliance with the Section 248(b)(2) criterion, the Department has expressed concern that the cost of the Project would add approximately $180,000 to VGS's annual revenue requirement.[58] When the Department asked the Company to identify cost off-sets that would result from the Project, VGS did not respond with detailed, documented savings estimates, but instead pointed generally to expected lower maintenance costs, improved productivity, and the elimination of certain pressure-testing costs ($150,000 to $200,000 every seven years).[59] Thus, the Department criticizes the Project due to the absence of what it considers to be quantifiable savings, but the Department has provided no evidence to contradict the Company's testimony that there indeed will be savings, albeit not all of which are

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52. Tr. 3/16/10 at 97 (Mertens).

53. *See* Findings 67 through 69, above.

54. Teixeira reb. pf. at 10; Mertens sur. pf. at 1.

55. *See* Finding 73, above. Absent approval and construction of the Project, VGS would expect to rebuild the Essex Station within 5 years. Stipulation at ¶ 46.

56. These costs are estimated to be between $150,000 to $200,000 every seven years. *See* Finding 75, above.

57. Federal pipeline safety regulations require periodic pressure testing for transmission piping, but do not impose such testing requirements for distribution facilities. Exh. Joint-5 at 10. Retiring the Essex Station will eliminate the need to use this pipe connection as a transmission facility, thereby allowing this pipe segment to be converted to a distribution facility, which, in turn, will permit the Company to cease incurring the expense of conducting transmission-pipe pressure tests for this segment of pipe every seven years. Finding 75, above.

58. Mertens pf. at 8.

59. *Id*. *See also* exh. Joint-9 at 12-13.

readily quantifiable.[60] I therefore conclude that the Project is likely to produce some off-setting cost savings that will inure to the benefit of VGS ratepayers by partially defraying the overall cost of the Project.

Accordingly, for the reasons discussed above, I conclude that the Project is necessary to eliminate the excessive gas velocity conditions that presently exist at the Winooski Station and the Essex Station. It is appropriate for the Company to construct and maintain its system in compliance with good engineering practices — the very objective the Project is designed to accomplish by remedying the unacceptably high gas velocities known to exist at two gate stations on VGS's system. Approval of the Project will help ensure that the 28,000 customers presently served by the Winooski Station and the Essex Station continue to receive reliable service from VGS. Furthermore, I find it is not probable that the need for the Project "could be met more cost-effectively through other alternatives."[61] Rather, I find it is probable that the Project — which proposes to rebuild and modernize only one gate station, instead of upgrading and maintaining two stations — is a more cost-effective solution than the DPS Alternative and is likely to result in savings for VGS ratepayers in the long run.

As a condition for approval of the Project under the Section 248(b)(2) criterion, the Department has suggested that the Board require VGS to provide additional information to the Board documenting the need for this Project, the reasons why it represents the most cost-effective alternative, and why it is the highest priority construction choice from among all similar VGS projects.[62] As I have determined that the Company has met its burden of proof under Section 248(b)(2), I do not recommend that the Board impose this condition.

System Stability and Reliability

[30 V.S.A. § 248(b)(3)]

81. The Project will not have an adverse effect on system stability or reliability. Teixeira pf. at 10; findings 41 through 59 above, and findings 82 through 117, below.

82. The Project will assure the continued reliability of service to VGS customers.

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60. Teixeira reb. pf. at 10; tr. 3/16/10 at 97 and 107 (Mertens).

61. Docket 6860, *Petitions of Vermont Electric Power Company, Inc. (VELCO) and Green Mountain Power Corporation (GMP) for a certificate of public good, pursuant to 30 V.S.A. Section 248, authorizing VELCO to construct the so-called Northwest Vermont Reliabity Project,* Order of 1/28/05 at 8.

62. DPS Brief at 10.

Tr. 3/16/10 at 21 (Teixeira); Stipulation at ¶ 6.

83. VGS designs, operates and maintains its stations to avoid catastrophic failures and to meet peak load conditions. The Company's performance target for its system is to provide reliable service 100 percent of the time. Tr. 3/16/10 at 25-26 (Teixeira).

84. VGS's practice of planning and maintaining its system for peak load is a common planning principle for a natural gas company. Tr. 3/16/10 at 27 (Teixeira).

85. To date, VGS has not experienced any catastrophic failures at either the Winooski Station or the Essex Station. It has had equipment fail at these stations, but neither station has gone off-line. Tr. 3/16/10 at 24 (Teixeira).

86. Historically, the risk of a catastrophic failure occurring on VGS's system has been low. The fact that the VGS system is "young" compared to gas systems nationwide suggests that it is unlikely to experience a catastrophic failure. Tr. 3/16/10 at 25 and 29 (Teixeira); tr. 3/16/10 at 121 (Mertens).

87. VGS designed the Project to integrate with its existing operations and in accordance with regulations promulgated by the U.S. Department of Transportation (49 C.F.R., Part 192) and Board Rule 6.100. Teixeira pf. at 10.

Redundancy

88. The Project will increase the reliability of the system by incorporating redundancy that is not in place under the current station configuration. Finding 74, above.

89. The Station configuration being proposed for the rebuilt Winooski Station consists of two separate regulator runs, with one run serving as a full backup to the other. If one run were to fail, the second run would be able to fully supply the gas to the system. Teixeira reb. pf. at 7; tr. 3/16/10 at 28 (Teixeira).

90. Each regulator run would consist of two identical regulators set up in what is termed a working and monitor regulator set. This configuration provides for both over-pressure protection and redundancy. Teixeira reb. pf. at 7.

91. If the working regulator were to fail in the open position to allow more gas pressure downstream, the monitor regulator would take over and reduce the pressure to the proper distribution level. Likewise, if one run were to fail in the closed position, which is fairly rare, the other run would be able to take over and completely supply the system. Tr. 3/16/10 at

33 (Teixeira).

92. Today, neither the Essex nor Winooski Stations provide full back-up to each other during the winter months. Each station serves a portion of the VGS system and neither can support the other station on a peak day. Teixeira reb. pf. at 6; Stipulation at ¶¶ 9-10 and 13; tr. 3/16/10 at 22-24 (Teixeira).

93. If the Essex Station were to have a complete catastrophic failure on a peak day, the Winooski Station could not pick up the load. Similarly, if the Winooski Station were to have a complete catastrophic failure on a peak day, the Essex Station could not pick up that load. Teixeira reb. pf. at 6; Stipulation at ¶¶11-13; tr. 3/16/10 at 23 (Teixeira).

94. The two stations currently can provide back-up to each other on warmer days when temperatures exceed 40 degrees, generally April through October. Teixeira reb. pf. at 6; Stipulation at ¶¶11-13; tr. 3/16/10 at 23 (Teixeira).

95. VGS has not undertaken a study to determine how many hours per year the two stations currently can provide back up to each other. Stipulation at ¶ 13.

96. The parallel regulator runs at the Winooski and Essex Stations do not currently provide 100 percent redundancy. To operate properly, one regulator has to be set for lower outlet pressure than the other. Stipulation at ¶ 8.

97. The two separate regulator runs proposed for the Winooski Station will serve as a replacement for the level of redundancy that presently exists between the Essex and Winooski Stations. Tr. 3/16/10 at 28 (Teixeira).

98. A complete catastrophic failure at the rebuilt Winooski Station on a peak day would affect 28,000 customers, which represents an increase of 7,000 more customers who would be affected by such an outage than under the existing, dual station configuration.[63] However, the Project will provide greater day-to-day reliability for the total customer base of 28,000 due to the two redundant regulator runs and the additional safety features provided by their working and monitor regulator design. Teixeira reb. pf. at 7.

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63. The Winooski Station presently serves 7,000 customers, while the Essex Station presently serves 21,000 customers. *See* Findings 36 and 37, above. Thus, if a catastrophic failure were to occur at either one of these stations as presently configured, the number of affected customers would be either 7,000 (Winooski) or 21,000 (Essex).

99. In order for a catastrophic failure to occur, both the working and monitor regulator runs would need to be completely disabled. Tr. 3/16/10 at 34 (Teixeira).

100. If a catastrophic failure occurred at the rebuilt Winooski Station during April through October, VGS would still be able to provide service to its customers. Tr. 3/16/10 at 28 (Teixeira).

101. Serving 28,000 customers from a single gate station as contemplated by the Project does not raise undue concern; VGS already serves 100 percent of its customers from a single gate station, its border station. Teixeira reb. pf. at 7.

System-End-Point Pressures

102. VGS models its distribution system in response to customer growth and identifies potential pressure problems and addresses them before they materialize. The Company updates its system analysis model annually to review the need for system reinforcements to stay current with gas-load changes in its distribution system. Tr. 3/16/10 at 47 (Teixeira); Teixeira reb. pf. at 3; Stipulation at ¶ 17.

103. If system-end-point pressures drop too low and remain unaddressed, customers may experience problems with their gas equipment and, in extreme cases, suffer gas outages. Stipulation at ¶ 29.

104. Typically, VGS monitors pressure levels at the end-points in its distribution system — the Company's stations in Jericho and Williston. Mertens pf. at 3.

105. VGS aims to maintain a pressure level of 30 psig at the end points of its system on a design day. Teixeira reb. pf. at 3.

106. A pressure level of 30 psig is an acceptable standard for system-end-point pressure on a design day. Teixera reb. pf. at 3; tr. 3/16/10 at 99 (Mertens).

107. In November of 2009, VGS completed its Airport Parkway distribution reinforcement project (the "Airport Parkway Project"), which cost $466,295. Stipulation at ¶¶ 24 and 26.

108. The Airport Parkway Project was constructed to address low distribution pressures in Williston and to ensure adequate pressures after VGS's expansion into Hinesburg. Teixeira reb. pf. at 4.

109. With the Airport Parkway Project now in place, the Project will not result in insufficient system pressures at its system-end-points. Teixeira reb. pf. at 3.

110. With the Airport Parkway Project now in place, VGS's system-end-point pressures after construction of the Project will be reliable at both the Jericho and Williston Stations under five, ten and eighteen-year design load forecasts. Teixeira reb. pf. at 4.

111. At the request of the Department, VGS prepared network modeling analyses (using the Stoner Model, which is discussed in the next finding) to predict system pressures based on future demand forecasts under varying piping configurations. Stipulation at ¶19; Mertens pf. at 3.

112. The Stoner Model is an algorithm that considers a variety of physical variables (pipe length, pressure, friction, etc.) and then applies the thermodynamic gas laws to analyze the effect of each piping design on delivered pressure at a point in the system. The results of the analysis represent the expected or observed pressure inside the pipe. A higher "psig"[64] pressure reading generally reflects a better ability to serve customers during peak periods. Mertens pf. at 3.

113. Absent construction of the Project, system-end-point pressures at the Jericho Station are projected to be 58.35 psig in five years, 56.25 psig in ten years and 52.63 psig in eighteen years. The projected system pressures at Williston are 48.80 psig in five years, 45.76 psig in ten years and 40.38 psig in eighteen years. All of these psig values fall above VGS's target design-day pressure level of 30 psig. Teixeira reb. pf. at 5; Stipulation at ¶ 25.

114. With construction of the Project, system pressures at the Jericho Station are projected to be 52.16 psig in five years, 49.49 psig in ten years and 44.68 psig in eighteeen years. The projected system pressures at Williston are 41.92 psig in five years, 38.06 psig in ten years and 30.48 psig[65] in eighteen years. All of these psig values fall above VGS's target design-day pressure level of 30 psig. Teixeira reb. pf. at 4; Stipulation at ¶ 25; finding 106, above.

115. System pressures would be higher at these end points under the DPS Alternative, which provides for leaving the Essex Station in place. Teixeira reb. pf. at 5.

116. The alternative resulting in the highest end-point pressures is not necessarily the preferred option. In this case, the differences in end-point pressures between the Project and the DPS Alternative are not meaningful or significant enough to warrant preserving the existing,

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64. The acronym "psig" stands for "pounds per square inch, gauge."

65. The Stoner Model has a margin of error of plus or minus 10%. Therefore, based on the Stoner Model projections, it is possible that eighteen years from now the Project could result in a system-end-point pressure as low as 27 psig and as high as 33 psig at the Williston Station. Stipulation at ¶ 27.

dual-station configuration and foregoing the benefits of the Project. Teixeira reb. pf. at 5-6; tr. 3/16/10 at 47 (Teixeira).

117. If VGS experiences continuing customer load growth and field experience indicates that system-end-point pressures are trending lower than 30 psig, VGS would initiate a reinforcement project. Stipulation at ¶ 27.

Discussion

VGS maintains that the Project will not adversely impact system stability or reliability. To the contrary, the Company argues, the Project will enhance the safety and reliability of the system because the deployment of the upgraded station components, and most importantly, the working and monitor regulator design, will offer an added level of safety and reliability that is not present under the current station configuration.

The Department, however, contends that the Project will degrade the reliability of the system. The Department challenges the Company's position that the Project's single-station configuration will be able to provide reliable service equal to that which is currently provided by two gate stations. The Department further insists that the Project will result in lower system-end-point pressures over the long term. On balance, I do not find the Department's concerns about system degradation to be persuasive.

First, the Department's position that the Project provides less redundancy than that which is provided by having two gate stations overlooks the additional redundancy that will be incorporated into the Winooski Station through the dual-regulator (working and monitor) design. This design will provide greater reliability on a day-to-day basis to 28,000 VGS customers.[66] It is possible, as the Department argues, that consolidation of the two stations into one poses the risk that a peak-day catastrophic failure at the rebuilt Winooski Station would result in more customer outages than if such an outage struck only one of the stations.[67] However, the risk of a

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66. *See* Finding 98, above.

67. As examples of potential events that could cause a catastrophic failure of the Winooski Station, the Department has suggested that a tractor-trailer could "jump over" from the interstate and land on the Station, or that a near-by, high voltage tower could collapse and cause a fire. Tr. 3/16/10 at 152 (Mertens). The Department then argues that a major disadvantage of the Project is that either of these scenarios would affect 28,000 VGS customers, as opposed to only 7,000 if the two-station configuration were retained. *Id.* at 153 (Mertens). The Company counters that even under the existing, two-station configuration, all 28,000 customers are at risk for a simultaneous outage because it is conceivable that a catastrophic event affecting the system — such as a line failure upstream from

(continued...)

catastrophic, peak-day system failure is remote and unprecedented in the experience of the Company.[68] That said, the evidentiary record shows that even if the present two-station configuration were to remain in place, neither the Winooski Station nor the Essex Station would be able to support the other station's load if one station were to experience a catastrophic failure during peak periods.[69]

Second, the enhanced reliability features offered by the Project will serve as a precaution against a major station failure. The redundant regulator runs will provide full back up to each other, the upgraded station components will ensure better station function, and the ability to remotely monitor and adjust station equipment will enhance VGS's ability to provide effective oversight and responsiveness to station operations.

Taken together, these two points strongly suggest that the greater day-to-day system reliability fostered by the Project will likely off-set any incremental, peak-day risk posed by the consolidation proposed in the Project's single-station configuration. Thus, I conclude that in arguing that the Project will degrade the reliability of VGS's system, the Department focuses too narrowly on the remote possibility of a catastrophic failure at the rebuilt Winooski Station, and fails to acknowledge all of the other benefits to be realized with construction of the Project and the enhanced redundancy features it offers.

I turn next to the Department's concern that, based on the Stoner Model, it appears that eighteen years after the Project is completed, the system-end-point pressure at the Williston Station may fall to 27 psig,[70] which is below VGS's target design-day pressure level of 30 psig.[71]

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67. (...continued)
the Essex Station — would affect both stations. VGS PFD at 28.

68. *See* Findings 85 and 86, above.

69. *See* Findings 92 and 93, above.

70. The system-end-point pressure level that was projected by the Stoner Model for year eighteen at the Williston Station was 30.48 psig (+/- 10%). *See* Finding 114, above. In his surrebuttal testimony, Mr. Mertens focused on the value of 27 psig, which represents the low end of the 10% margin of error in the Stoner Model analysis. Mertens sur. pf. at 2-3. By that same token, it is equally possible under the Stoner Model that the system-end-point pressure level at the Williston Station at year eighteen would be 33 psig, a value that falls above VGS's targeted 30 psig standard.

71. The Department also has suggested that there may be "hidden costs" associated with the Project, such as a need to construct "subsequent distribution reinforcement" in the event that eighteen years from now, the deployment of the Project proves to have produced unacceptably lower system-end-point pressures. Mertens sur. pf. at 2-3. However, the Department has also stipulated that its concerns regarding potential "hidden costs" are speculative and are not based on specific knowledge. Stipulation at ¶¶ 56-57. Finally, Mr. Mertens testified that he did not know of
(continued...)

VGS acknowledges that the Project is likely to result in lower system-end-point pressures, but maintains that this loss in pressure is not meaningful or significant and that preserving the existing pressure levels[72] — which are higher than needed — is not worth forfeiting the benefits associated with constructing the Project.

I do not find the Department's system-end-point pressure argument compelling, as it rests on a modeling result that lies eighteen years in the future. As VGS has pointed out, the Stoner Model relies upon assumptions and calculations that are prone to becoming speculative as the end of the eighteen-year analytical time span is reached.[73] I am persuaded that VGS's system pressures are not likely to fall below VGS's target level of 30 psig, now that the Company's system has been reinforced by the completion of the Airport Parkway Project.[74] Further, given VGS's annual review of system pressure conditions and its record of maintaining its system free of station failures, I find no reason to conclude that the Company would allow its system-end-point pressure levels to drop and remain below an acceptable level. VGS has represented that it would take action to reinforce its system if pressure levels were to drop below 30 psig.[75]

In sum, I am not persuaded by the Department's system-degradation argument. I accept VGS's conclusion that the Project will not adversely affect system stability and that the net gains in overall reliability offered by the Project — additional over-pressure protection, redundant regulator runs, added security, and all-new station components — outweigh the benefit of averting the degree of reduction in system-end-point pressure that is likely to be caused by construction of the Project. I therefore conclude that VGS has met its burden under 30 V.S.A. § 248(b)(3) of demonstrating the Project will not have an adverse effect on system stability or reliability.

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71. (...continued)
any actual "hidden costs" attendant to the Project that the Company is overlooking or ignoring. Tr. 3/16/10 at 120 (Mertens).

72. VGS PFD at 26. Under the existing, dual-station configuration, the system-end-point pressure levels projected by the Stoner Model for the five, ten and eighteen-year forecasts are all in excess of 30 psig and would remain so even after the construction of the Project, with the exception of the eighteen-year forecast for the system-end-point at the Williston Station. *See* Finding 114, above.

73. Tr. 3/16/10 at 48 (Teixeira).

74. *See* Findings 107 through 110, above.

75. *See* Finding 117, above.

Economic Benefit to the State and Its Residents

[30 V.S.A. § 248(b)(4)]

118. The Project will result in an economic benefit to the State and its residents. Teixeira pf. at 10; finding 42, above, and finding 119, below.

119. Construction of the Project will ensure the continued availability of a competitively-priced fuel choice for the VGS customers who are downstream from the Project, which will strengthen the economic health of those customers and Vermont as a whole. Teixeira pf. at 10; tr. 3/16/10 at 142 (Mertens).

Discussion

In this proceeding, the Company has testified that construction of the Project will ensure the continued availability of a competitively-priced fuel choice for the VGS customers who are downstream from the Project, and that this will strengthen the economic health of those customers and Vermont as a whole. In turn, Department witness Mertens has testified that "[m]aintaining economic viability" by ensuring that "service is not interrupted" is an example of how the Section 248(b)(4) criterion may be satisfied.[76] Mr. Mertens also testified that he does not dispute the economic benefits of having competitively priced natural gas available for use by Vermonters.[77] Accordingly, I conclude that VGS has met its burden of proof for the economic benefit criterion in Section 248(b)(4).

Aesthetics, Historic Sites, Air and Water Purity,
the Natural Environment and Public Health and Safety

[30 V.S.A. § 248(b)(5)]

120. 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 121 through 172, below, which address the criteria specified in 10 V.S.A. §§ 1424a(d) and 6086(a)(1) through (8), 8(A) and (9)(K).

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76. Tr. 3/16/10 at 105 (Mertens). Mr. Merten's testimony on this point is consistent with Board precedent. *See* Docket 7457, Order of 11/4/08 at 7.

77. Tr. 3/16/10 at 142 (Mertens). This evidence notwithstanding, the Department argues in its brief that VGS has failed to carry its burden under the Section 248(b)(4) criterion because the Project "will not deliver any incremental benefits to the state or its residents in any fashion." DPS Brief at 15. The Department, however, cites no supporting authority for the proposition that Section 248(b)(4) requires a showing of an incremental economic benefit when a project is needed to ensure the continued reliability of a natural gas distribution system.

Public Safety

[30 V.S.A. § 248(b)(5)]

121. The Project will not have undue adverse effect on the public health and safety. Teixeira pf. at 11; findings 122 and 123, below.

122. The Project will be designed and constructed in accordance with U.S. Department of Transportation regulations and Board Rule 6.100. Teixeira pf. at 12.

123. VGS has obtained construction and occupancy permits from the Fire Prevention Division of the Vermont Department of Labor and Industry for the buildings included in the Project. Teixeira pf. at 11; exh. VGS-3.

Outstanding Resource Waters

[10 V.S.A. § 1424(a)(d)]

124. The Project corridor is neither on nor near any waters designated as Outstanding Resource Waters. Teixeira pf. at 16.

Water and Air Pollution

[10 V.S.A. § 6086 (a)(1)]

125. The Project will not result in undue water or air pollution. Teixeira pf. at 12; findings 126, 127, 144 and 145, below.

126. Because the Project has been designed in accordance with the U.S. Department of Transportation regulations and Board Rules 6.100, the Project will not involve any discharges or emissions into the air or water. The methods and materials of construction to be used will conform to the latest standards of the State of Vermont. The erosion-control and property-drainage specifications have been designed to comply with 10 V.S.A. § 6086(a)(4). Teixeira pf. at 12-13; exh. VGS-1 at 26.

127. Because the construction of the Project will take place within an area that is already disturbed, using appropriate construction techniques, the Project will not change the air quality or water purity in the area. Teixeira pf. at 13; finding 27, above.

Headwaters

[10 V.S.A. § 6086(a)(1)(A)]

128. The Project will not have an adverse impact on any headwaters. This finding is supported by findings 129 and 130, below.

129. The Project does not cross or affect any of the following types of headwater areas: watersheds characterized by steep slopes and shallow soils; locations above 1,500 feet in elevation; and watersheds of public water supplies, or areas supplying significant amounts of recharge waters to aquifers. Teixeira pf. at 12.

130. There are no health or environmental regulations that are directly applicable to the Project. Teixeira pf. at 12.

Waste Disposal

[10 V.S.A. § 6086(a)(1)(B)]

131. The Project will meet all applicable health and environmental conservation regulations regarding the disposal of waste and will not involve the injection of waste materials or any harmful or toxic substances into groundwater or wells. This finding is supported by findings 132 and 133, below.

132. Given the nature and function of the Project, no additional waste will be generated by its operation. Nor will any waste materials or harmful or toxic substances be injected into ground water or wells. Teixeira pf. at 12.

133. The existing regulators at the Winooski Station will be removed from the site and retained in order to provide spare parts for the Company's other gate stations. Teixeira reb. pf. at 7.

Discussion

The Company has not submitted a comprehensive plan with its petition that demonstrates how it will dispose of the waste generated by the dismantling of the existing facilities at the Winooski Station (i.e., removal of the undersized station piping) in preparation for the construction of the Project. Accordingly, as a condition of approval, I recommend that the Board require VGS to submit such a waste disposal plan as a compliance filing within 30 days of the issuance of a CPG for the Project.

Water Conservation

[10 V.S.A. § 6086(a)(1)(C)]

134. The Project will not require the use of water. Teixeira pf. at 12.

Floodways

[10 V.S.A. § 6086(a)(1)(D)]

135. The Project is not located in a floodway or floodway fringe. Teixeira pf. at 12.

Streams and Shorelines

[10 V.S.A. §§ 6086(a)(1)(E) and 6086(a)(1)(F)]

136. The Project will not result in an adverse impact on streams or shorelines. This finding is supported by findings 136 and 137, below.

137. The Project is not on land on or adjacent to the banks of a stream; there are no streams within 600 feet of the Project. Teixeira pf. at 12.

138. There are no shorelines near the Project. Teixeira pf. at 12.

Wetlands

[10 V.S.A. § 6086(a)(1)(G)]

139. The Project will not adversely affect any significant wetlands or the natural environment. Teixeira pf. at 12; findings 120 through 137, above, and findings 139 and 154, below.

140. The Project does not have an impact on any wetlands identified by the U.S. Army Corps of Engineers or Vermont state regulations. Teixeira pf. at 12.

Sufficiency of Water and Burden on Existing Water Supply

[10 V.S.A. §§ 6086(a)(2)&(3)]

141. There will be sufficient water available for the reasonably foreseeable needs of the Project, and the Project will not impose an unreasonable burden on the existing water supply. Teixeira pf. at 13; findings 125 and 128, above, and findings 141 through 143, below.

142. The Project will use little water during construction. It will require approximately 400 gallons of water to pressure-test the station piping. Teixeira pf. at 13.

143. The water to be used for the pressure-testing will be trucked in to the Project site. Teixeira pf. at 13.

144. The Project will not use water for on-going operations. Teixeira pf. at 13.

Soil Erosion

[10 V.S.A. § 6086(a)(4)]

145. The Project will not cause unreasonable soil erosion or reduction in the capacity of the land to hold water. Teixeira pf. at 13; finding 125, above, and finding 145, below.

146. The Project will be constructed in a flat area using appropriate construction techniques. The erosion-control and property-drainage specifications have been designed to comply with 10 V.S.A. § 6086(a)(4). Teixeira pf. at 13; exh. VGS-1 at 26.

Discussion

The Project will be constructed in a flat area where there is little risk of soil erosion. VGS has testified that it intends to use "appropriate" construction techniques for the Project. In keeping with Board practice, I recommend that the Board specifically require the Company to perform the construction in accordance with the Vermont Department of Environmental Conservation's "Low Risk Site Handbook for Erosion Prevention and Sediment Control." Furthermore, with this condition, I conclude that VGS has met the burden of proof for this criterion.

Transportation

[10 V.S.A. § 6086(a)(5)]

147. The Project will not cause unreasonable congestion or unsafe conditions with respect to any affected means of transportation. Teixeira pf. at 13; findings 157 through 149, below.

148. The Project will not interfere with any main road. The Project will be constructed at the dead end of a public road and will not interfere with the use or maintenance of the road either during or after construction is completed. There is adequate space at the existing location of the Project for maintenance vehicle parking. Teixeira pf. at 13-14.

149. There will be no increase in the existing, limited transportation needs at the site because the Project footprint will not change after construction. Teixeira pf. at 13.

150. VGS designed the Project in accordance with U.S. Department of Transportation regulations and Board Rule 6.100, which will ensure safe use of the roads implicated by the Project. Teixeira pf. at 14.

Educational and Municipal Services

[10 V.S.A. §§ 6086(a)(6) & (7)]

151. The Project will not place an unreasonable burden on the ability of the municipality to provide educational or municipal or governmental services. Teixeira pf. at 14; finding 151, below.

152. The Project contains no components that would have an impact on the local school system, nor will the Project adversely affect any other governmental or public-utility facilities, services or lands. Teixeira pf. at 14.

Aesthetics, Historic Sites or Rare and Irreplaceable Natural Areas

[10 V.S.A. § 6086(a)(8)]

153. The Project will not have an undue adverse effect on the scenic or natural beauty of the area, or upon aesthetics, historic sites or rare and irreplaceable natural areas. Teixeira pf. at 14; findings 153 through 168, below.

154. The Project is not located adjacent to any above-ground registered or other historic sites. Teixeira pf. at 15.

155. The Project will not adversely affect any rare and irreplaceable natural areas or necessary wildlife habitat or endangered species. Teixeira pf. at 15.

156. Because the Project is a rebuild of a preexisting facility and therefore will be constructed in an area that has been previously disturbed, the Project will not have an impact on any historic or archaeological sites. Teixeira pf. at 15; finding 27, above.

157. The Project will improve the aesthetics of the site by enclosing the pressure-regulation equipment and associated equipment in metal structures. Teixeira pf. at 14-15.

158. VGS plans to relocate or replace an existing cedar hedge on the northerly/easterly side of the existing fence line at the Winooski Station. The hedge will be moved to the uphill side of a new drainage swale that will run the length of the Station's new northerly/easterly fence line. Exh. Board-4; exh. VGS-1 at 24.

159. VGS plans no aesthetic mitigation measures for the southerly side of the Station site because the Project will have no impact upon that area of the Station, which is presently occupied by a railroad track and overhead power lines located in a Vermont Electric Power Company right-of-way. Exh. Board-4.

160. VGS plans no aesthetic mitigation measures for the westerly side of the Station site because in that area there is presently a 225-foot buffer of woodlands separating the Winooski Station from Interstate 89. The Station will not be visible from Interstate 89. Exh. Board-4.

161. As a result of the Project, there would be an increase in the velocity of the gas flowing through the Winooski Station. While this increase in gas velocity would raise the noise level at the Station, the additional noise would be off-set to some degree by the dampening effect of the Enclosure Building, which would reduce noise in the neighboring area. Exh. Board-2; Teixeira pf. at 14-15.

162. No sound-level measurements have been taken at the existing Winooski Station. Stipulation at ¶ 40.

163. The Winooski Station is located close to Interstate 89 in a remote, hidden area that is not near any structure where noise abatement is likely to be needed. Mertens pf. at 6; tr. 3/16/10 at 155 (Mertens); Teixeira reb. pf. at 9; exh. Board-2 at 2.

164. VGS has calculated that currently, during the peak hour of operation at the Station (which generally occurs between 6:00 a.m. and 8:00 a.m.), the noise level produced by the operation of the Winooski Station is approximately 86 db. The noise level at the existing fence line is estimated to be 58 db. Exh. Board-2; exh. Joint-5 at 11.

165. VGS has calculated that after construction of the Project and during the peak hour of operation, the noise level at the Station would be 111db if the station facilities were not housed in the Enclosure Building. However, with construction of the Enclosure Building, the noise level produced by the operation of the rebuilt Winooski station would be reduced to approximately

60 db when measured outside of the Enclosure Building, while the noise level at the new fence line would be approximately 34 db. Exh. Board-2; exh. Joint-5 at 11.

166. The closest commercial building to the Project is located approximately 700 feet west of the Station and across Interstate 89. Exh. Board-2.

167. There are no residential dwellings within several thousand feet to the east, south and west of the Station. Exh. Board-2.

168. The closest residential neighbor to the Project is located 315 feet north of the Winooski Station. Under the existing conditions at the Winooski Station, VGS's calculations indicate that the noise level at this residence presently is approximately 36 db. With construction of the Project, VGS's calculations indicate that the noise level at this residence would be reduced to approximately 10 db due to the dampening effect of the Enclosure Building. Stipulation at ¶ 35; tr. 3/16/10 at 59 (Teixeira); exh. Joint-5 at 11-12.

169. That same residential neighbor is located 105 feet east of Interstate 89. Exh. Board-2.

Discussion

The Department argues that VGS has failed to carry its burden in regard to Section 248 (b)(5) because the evidentiary record is incomplete in regard to whether the Project will result in adverse noise effects. The Department contends that any Board approval of the Project should not include the Enclosure Building, which the Department views as excessively expensive and not likely to provide any useful noise-abatement, given the station's proximity to Interstate 89 and its "low lying, shielded location."[78] The Department points out that VGS has neither measured the current noise levels at the Winooski Station, nor conducted any formal studies to estimate the noise levels after the Project is constructed.[79] Thus, the Department contends that this data gap deprives the Board of a basis for determining what the noise impact would be if the Project were constructed without the Enclosure Building.[80] Accordingly, the Department suggests that as a condition of approval of the Project, the Board should require VGS (1) to perform a detailed

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78. Mertens pf. at 6. The Department is also skeptical of the need to deter vandalism at the Winooski Station and has suggested that the Enclosure Building in fact may invite vandalism by providing a target for gun shots. Tr. 3/16/10 at 155 (Mertens). I do not find this rationale compelling. I find more persuasive the Company's reasoning that a building is "one more deterrent to unauthorized people" who wish to damage the equipment at a gate station. *See* Exh. Joint-11 at 10.

79. DPS Brief at 18.

80. DPS Brief at 17.

noise study and show "why the Project does not cause undue adverse health and safety impacts relative to noise," and (2) to explain in greater detail the basis and methodology for its noise estimates.[81]

The Company maintains that the noise study proposed by the Department would be "superfluous and an unnecessary expense" under the circumstances of this case.[82] The Company acknowledges that the noise level at the Winooski Station would increase as a result of the increase in gas velocity flowing through the rebuilt facility, but emphasizes that the Project is not located near any residences or other structures that might necessitate noise abatement.[83] VGS considers noise abatement to be an incidental benefit, and not the core justification, of the Enclosure Building as a component of the Project.[84]

I do not accept the Department's argument for eliminating the Enclosure Building from the Project. I am persuaded that there are other valid reasons beyond noise abatement for seeking to enclose the equipment and work area at the Winooski Station, such as achieving "improved thermal efficiency at the station, a higher level of security, and better protection of the equipment and the technicians from the elements when working on the equipment."[85]

The evidentiary record reflects that VGS provided estimates of the noise impacts of the Project.[86] While these estimates consist of simple calculations, no persuasive evidence has been presented to challenge the reliability of these calculations. The Company estimates indicate that due to the Project – specifically, the construction of the Enclosure Building – the estimated current noise level of 58 db at the existing fence line of the Winooski Station is likely to drop to 34 db at the new fence line. Similarly, the Company's calculations show that the existing noise impact of 36 db upon the closest residential neighbor (approximately 315 away) is likely to drop to 10db. Based on this evidence and the remoteness of the location of the Winooski Station, as well as its proximity to Interstate 89, I agree with Department witness Mertens that there is "no

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81. DPS Brief at 19.
82. Teixeira reb. pf. at 9.
83. Exh. Board-2 at 1;Teixeira reb. pf. at 9.
84. Teixeira reb. pf. at 9.
85. Teixeira reb. pf. at 9.
86. *See* exh. Joint-5 at 11-12 and exh. Board-2. The Department stipulated to the admission into evidence of these exhibits. Tr. 3/16/10 at 56, 160 and 162 (Elias).

reason to believe noise is an issue" in this case.[87] The Department has produced no compelling evidence or persuasive argument to suggest that greater expenditure of time and expense is warranted to more fully explore the reliability of VGS's noise-impact estimates or the need for additional noise-abatement measures. Therefore, I do not recommend that the Board adopt the Department's proposed condition for additional study of the noise impacts of the Project.

Necessary Wildlife Habitat and Endangered Species

[10 V.S.A. § 6086(a)(8)(A)]

170. The Project will not have an impact on any necessary wildlife habitat or endangered species. Teixeira pf. at 15; finding 170, below.

171. The Project will have no effect on any significant wetlands or the natural environment. Teixeira pf. at 15.

Development Affecting Public Investments

[10 V.S.A. § 6086(a)(9)(K)]

172. The Project will not unnecessarily or unreasonably endanger the public or quasi-public investments in any governmental and 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. Teixeira pf. at 14; findings 146 and 150, above, and finding 172, below.

173. The Project will not affect any governmental or public-utility facilities, services or lands. Teixeira pf. at 14.

Consistency With Company's Least-Cost Integrated Plan

[30 V.S.A. § 248(b)(6)]

174. The Project is consistent with least-cost planning principles. Teixeira pf. at 16; finding 71, above, and findings 174 through 178, below.

175. VGS filed its 2008 IRP for review in June of 2008. Approval of that plan is now pending in Docket 7459. Teixeira reb. pf. at 2.

176. In the 2008 IRP, VGS indicated that it intended to upgrade its aging gate stations. Teixeira reb. pf. at 2; tr. 3/16/10 at 76 (Teixeira).

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87. Tr. 3/16/10 at 101 (Mertens).

177. The Project is designed to rebuild an existing pressure-regulation station. The load to be served from the Station is included in VGS's 2008 IRP. Teixeira pf. at 16.

178. The Project will not have any adverse environmental effects. The Project does not threaten any Class III wetlands, or otherwise disturb new ground or wildlife habitat. Teixeira reb. pf. at 3; tr. 3/16/10 at 91-92 (Mertens).

179. Within a gas distribution system, the function of a pressure-regulation station is a necessary component that cannot be replaced through energy conservation, energy efficiency or load management programs. Teixeira pf. at 9.

Discussion

Pursuant to 30 V.S.A. § 218c(b),VGS is obliged to "prepare and implement a least-cost integrated plan for the provision of energy services to its Vermont customers." While VGS has an integrated resource plan, it does not have a plan that has been formally approved by the Board. VGS's most recent plan — the 2008 IRP — is presently under review in Docket 7459. Vermont law, however, does not prohibit the Board from granting a CPG under § 248 for a utility that does not have an approved least-cost integrated plan, "provided that the Board shall consider in its review under that section those environmental effects which the utility must consider in developing a least cost integrated plan."[88] Therefore, I conclude that the absence of an approved IRP for VGS does not pose an insurmountable legal barrier to approval of the Project at issue in this docket.[89]

The Company's 2008 IRP — while not yet approved — indicates that the Company was planning to upgrade its gate stations to accommodate its projected load growth.[90] I therefore conclude that the Project is consistent with VGS's 2008 IRP as presently written.

In reviewing the Project, I have considered the environmental effects that VGS is obliged to take into consideration when developing a least-cost integrated plan. These considerations

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88. 1991, No. 259 (Adj. Sess.), § 7.

89. The Department and VGS concur with this legal conclusion. VGS PFD at 36-37; DPS Brief at 22.

90. The Department acknowledges this fact to be true. Tr. 3/16/10 at 88 (Mertens). The Department counters, though, that VGS's 2008 IRP lacks sufficient details to allow a determination of whether the Project is consistent with that plan. *Id.* While this may be a legitimate criticism of the Company's 2008 IRP, the granularity of the plan is not the substantive focus of this docket, which concerns a review of a petition for a CPG pursuant to 30 V.S.A. § 248(j). The Department's concerns about the merits of VGS's 2008 IRP should be addressed in Docket 7459.

include: (1) "environmental costs;"[91] (2) the state's "greenhouse gas reduction goals;"[92] (3) comprehensive energy efficiency programs that represent a "coordinated set of investments or program expenditures . . . to meet the public's need for energy services through efficiency, conservation or load management . . . .;"[93] and (4) the state energy policy of assuring "to the greatest extent practicable, that Vermont can meet its energy service needs in a manner that is . . . environmentally sound."[94]

The environmental costs of the Project are *de minimus*.[95] Specifically, the Project entails rebuilding the existing Winooski Station in the same location, and therefore there will be no new environmental impacts resulting from approval of this petition. Furthermore, the Project poses no danger to any Class III wetlands and will not disturb new ground or wildlife habitat.[96] Nor is there any evidence in the record to otherwise suggest that the Project will not serve to meet the public's need for energy service in a manner that is environmentally sound. The evidentiary record further gives no indication that the Project will have an effect upon the state greenhouse gas reduction goals. Finally, the Project is designed to serve a function that cannot be met through energy conservation, energy efficiency or load management programs.[97] Based on these facts, I conclude that the Project is consistent with the environmental effects that VGS must consider in developing an IRP.

The Department contends that the Project fails to satisfy Section 248(b)(6) because it believes that VGS does not take its least-cost integrated planning obligation "seriously."[98] The Department supports this argument by pointing to perceived shortcomings in the Company's "long range planning and long term system expansion planning."[99] The Department has concluded that it is "not possible to determine" whether the Project would "support or hinder growth in the areas immediate and adjacent to Winooski and Colchester" or how the Project

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91. 30 V.S.A. § 218c(a)(1).
92. 30 V.S.A. § 218c(a)(1)(B).
93. 30 V.S.A. § 218c(a)(2).
94. 30 V.S.A. § 202a(1).
95. *See* Findings 120, 154, 155, 170 and 177, above.
96. Teixeira reb. pf. at 3; tr. 3/16/10 at 91-92 (Mertens).
97. *See* Finding 178, above.
98. DPS Brief at 22.
99. DPS Brief at 23.

affects "system expansion into other areas of the state."[100] These issues, however, were addressed by VGS witness Teixeira during the technical hearing, where he testified that the Project would neither encourage nor deter the Company's growth either within or beyond Chittenden County.[101] Finally, the Department has not demonstrated through evidence or argument how its concerns about system expansion planning relate to the "environmental effects which the utility must consider in developing a least cost integrated plan."[102] Thus, for the foregoing reasons, I conclude that the Project satisfies the requirements of Section 248(b)(6).

Outstanding Water Resources

[30 V.S.A. § 248(b)(8)]

180. There are no water resources at or adjacent to the Project site that have been designated as Outstanding Resource Waters. Teixeira pf. at 16.

Inapplicable Criteria

181. The Project is not a natural-gas facility that is part of or incidental to an electric-generating facility, thus, the seventh criterion of Subsection 248(b), requiring compliance with the Department's electric-energy plan, and the tenth criterion, addressing use of existing and planned transmission facilities, are not applicable. *See* 30 V.S.A. § 248(b)(7), (10).

182. The Project is not a waste-to-energy facility; therefore, the ninth criterion of Subsection 248(b) is not applicable. *See* 30 V.S.A. § 248(b)(9).

V. CONCLUSION

At issue in this Docket is a petition for a construction permit pursuant to Section 248(j). In such a proceeding, the controlling standards for regulatory review are the criteria of Section 248. The Department and VGS have disagreed about the need for and cost of the Project,[103] the best use and maintenance of the Company's existing assets in service,[104] and the optimal

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100. *Id.*

101. Tr. 3/16/10 at 71-72 (Teixeira).

102. 1991, No. 259 (Adj. Sess.), § 7. The Department asserts that "this legislative pronouncement may simply be wrong" but maintains that this "is not an issue that can be resolved in this proceeding." DPS Brief at 22.

103. Tr. 3/16/10 at 46 (Teixeira); 62-63 (Mertens).

104. Tr. 3/16/10 at 65-66 (Teixeira); 140-41 and 156-57 (Mertens).

planning strategy for the future of VGS's system.[105] Having considered and weighed all of the evidence, I am persuaded that VGS has adduced sufficient credible and persuasive evidence to satisfy all Section 248 criteria that are applicable to the Project.

In this Docket, the Department has expressed concerns about VGS's planning process, in particular with regard to the Company's approach to assessing and documenting the comparative costs of the projects it chooses to invest in and construct.[106] VGS, in turn, has credited the Department with moving the Company to explain the cost-effectiveness of the Project when compared to alternatives, as required under Section 248(b)(2). Additionally, the Company has provided assurances that it will include alternative cost data in future Section 248(j) applications.[107] I take this opportunity to remind VGS that in the event the Board approves the Project, the Company will continue to bear the responsibility for satisfactorily documenting and demonstrating a sound basis for any rate-recovery it may seek for the Project.[108]

Thus, based upon my review of the entire evidentiary record, and for the reasons discussed in this Proposal for Decision, I conclude the Project will be of limited size and scope, that the public interest is satisfied by the procedures authorized in 30 V.S.A. § 248(j), and the Project will promote the general good of the state. I specifically conclude that the Project:

(a) 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, and the recommendations of the municipal legislative bodies;

(b) 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 land management measures;

(c) will not adversely affect system stability and reliability;

(d) will result in an economic benefit to the state and its residents;

(e) will not have an undue adverse effect on aesthetics, historic sites, air and water

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105. Tr. 3/16/10 at 67-68 (Teixeira); 143 (Mertens).

106. Tr. 3/16/10 at 144-45 and 150 (Mertens).

107. Tr. 3/16/10 at 54 (Teixeira).

108. Adequate documentation has long been recognized as the cornerstone of obtaining regulatory approval for additions to a utility's rate base. Docket 5983, *Tariff Filing of Green Mountain Power Corporation*, Order of 2/27/98 at 63.

purity, the natural environment and the public health and safety, with due consideration having been given to the criteria specified in 10 V.S.A. § 1424a(d) and §§ 6086(a)(1) through (8) and (9)(K);

(f) is consistent with the principles of least-cost integrated resource planning;

(g) does not involve a facility affecting or located on any segment of the waters of the State that has been designated as outstanding resource waters by the Water Resources Board; and

(h) does not involve a waste-to-energy facility.

I therefore recommend that the Board issue an order and a CPG authorizing the construction of the Project. I further recommend that the Board find, based on the weight of the evidence, that approval of the Project will promote the general good of the State of Vermont.

To the extent that these findings are inconsistent with any proposed findings, such proposed findings are denied.

Pursuant to 3 V.S.A. § 811, a proposal for decision has been served on the parties to this case.

Dated at Montpelier, Vermont, this 20th day of August, 2010.

s/ June E. Tierney, Esq.
June E. Tierney, Esq.
Hearing Officer

VI. ORDER

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

1. The rebuilding by Vermont Gas Systems, Inc. ("VGS") of the pressure-regulation station in Winooski, Vermont (the "Project"), will promote the general good of the State of Vermont in accordance with 30 V.S.A. § 248, and a certificate of public good ("CPG") to that effect shall be issued.

2. Construction, operation and maintenance of the Project shall be in accordance with the plans and evidence submitted in this proceeding.

3. VGS shall comply with the construction requirements contained in the Vermont Department of Environmental Conservation's Low Risk Site Handbook for Erosion Prevention and Sediment Control.

4. VGS shall submit a demolition waste disposal plan for Board approval as a compliance filing within 30 days of the issuance of the CPG for the Project.

5. If VGS's system-end-point pressures at either the Jericho Station or the Williston Station fall below 30 psig as a result of the construction of the Project, VGS shall evaluate the need to take corrective action, including initiating a system-reinforcement project, if warranted.

Dated at Montpelier, Vermont, this 3rd day of September, 2010.

s/ James Volz	)	
	)	PUBLIC SERVICE
	)	
s/ David C. Coen	)	BOARD
	)	
	)	OF VERMONT
s/ John D. Burke	)	

OFFICE OF THE CLERK

FILED: September 3, 2010

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 in writing) of any apparent errors, in order that any necessary corrections may be made. (E-mail address: psb.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.