

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

BEFORE THE STATE OF WASHINGTON
ENERGY FACILITY SITE EVALUATION COUNCIL

IN RE APPLICATION NO. 2002-01

EXHIBIT 20R.0 (MSM-RT)

BP WEST COAST PRODUCTS, LLC.

BP CHERRY POINT COGENERATION
PROJECT

29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

APPLICANT'S PREFILED REBUTTAL TESTIMONY

MARK S. MOORE

Q. Please reintroduce yourself to the Council.

A. My name is Mark Moore. I am the project manager for the Cherry Point
Cogeneration Project.

Q. What testimony will you be addressing in this rebuttal?

A. I will be responding to portions of the testimony filed by Bill Elfo, Kate Stenberg,
Douglas Goldthorp, Hal Hart, and Paul Wierzba.

1 **Bill Elfo's Testimony**
2
3
4

5 **Q. In his testimony, Sheriff Elfo suggests that the Site Certification Agreement**
6 **should include a requirement that the Certificate Holder pay for**
7 **"unanticipated and extraordinary costs" incurred in connection with the**
8 **construction of the Cogeneration Project. How do you respond to that**
9 **suggestion?**
10

11
12
13
14
15 A. In the past, the refinery has hosted larger numbers of craftsmen than are anticipated
16 for the Cogeneration Project, without requiring significant additional services from
17 the Sheriff's office. For instance, during the 1999 Crude Flexibility project and
18 associated major Crude and Coker unit maintenance period, some 2,000 craftsmen
19 per day were added to the 400 contractors normally working at the refinery. As
20 Sheriff Elfo testified, these activities "have not imposed service demands for which
21 the Sheriff's Office could not meet within its existing manpower and budgetary
22 levels." Given the significant tax revenues that the County will receive as a result of
23 the Cogeneration Project, we would not expect that the County would need any
24 additional revenues for project-related activities. In fact, Sheriff Elfo acknowledged
25 in his testimony that he "would anticipate the Sheriff's Office will be fully capable of
26 meeting the manpower needs during the construction phase of the project."
27
28
29
30
31
32
33
34
35
36
37
38
39
40

41 Nonetheless, if the construction of the Cogeneration Project requires specific
42 unanticipated services which result in additional overtime for the Sheriff's
43 Department, we would be willing to reimburse these costs as long as they were
44 reasonable and approved in advance. We would like to know what these costs would
45
46
47

1 be in advance to see whether we could mitigate them. Good communication
2 between the project team and the Sheriff's department will be a necessary part of this
3 process.
4
5
6
7

8
9 **Q. Sheriff Elfo also expresses concern about terrorist activities and suggests that**
10 **the Cogeneration Project furnish space within the Cherry Point industrial area**
11 **for a Sheriff Department substation. What is your response to that suggestion?**
12

13
14
15 A. Whether or not the Cogeneration Project is built, BP is willing to provide office
16 space for a police substation at the Cherry Point refinery.
17
18

19
20
21 **Kate Stenberg's Testimony**
22

23
24
25 **Q. At page 15 of Kate Stenberg's testimony, she recommends several additional**
26 **mitigation measures. I would like to get your reaction to some of her**
27 **suggestions that concern the project's construction and operation. First, she**
28 **suggests that "all outdoor lighting should be shielded to prevent any light from**
29 **extending north of Grandview Road or up into the sky." What is your response**
30 **to that suggestion?**
31
32

33
34
35
36
37 A. We understand the desire to minimize the off-site impacts of lighting at the facility.
38 At the same time, we need to balance that desire with the need to provide sufficient
39 lighting for worker safety and for site security. As I understand it, Dr. Stenberg is
40 concerned specifically about the potential impact of lighting on the blue heron that
41 reside on a 180-acre plot of land that BP donated to the Whatcom Land Trust for use
42 as a heronry in 1996 and 1999. The heronry is located approximately 2.5 km
43
44
45
46
47

1 northwest of the Cogeneration Project site. The refinery and its parking lots are
2 actually considerably closer to the herons, and yet the associated lighting, which is
3 much greater than that for the Cogeneration Project, apparently does not disturb the
4 herons. It therefore stands to reason that lights further away and of a similar type
5 would not bother the herons either. We would commit to using lighting of a type
6 similar to that already used in the refinery.
7
8
9
10
11
12
13

14
15 **Q. Next, she recommends "all stacks, cooling towers, and transmission line towers**
16 **should be kept to minimum heights and must not include lights." What is your**
17 **response to that suggestion?**
18
19

20
21 A. The equipment proposed for use with the cogeneration project is somewhat standard
22 in design. In general, equipment heights are minimized to the extent possible while
23 still providing the needed functionality. The proposed heights are all specified in the
24 application, and Dr. Stenberg has not identified any problems with the proposed
25 heights. Significantly, the Refinery already has numerous taller structures, which are
26 located closer to the heron colony, and they do not appear to present any problems to
27 the heron. We do not intend to place navigation lights on the HRSG stacks or
28 transmission towers since they will be less than 200 feet tall. However, lights are
29 required on elevated equipment walkways and platforms so technicians may safely
30 operate equipment at night.
31
32
33
34
35
36
37
38
39
40
41

42
43 **Q. Dr. Stenberg testified that "[t]ransmission towers must not include any guy**
44 **wires." What is your response to that suggestion?**
45
46
47

1 A. The transmission towers used to support lines to the BPA transmission system east
2 of the project site will not require guy wires.
3
4

5
6 **Q. She also suggests that "[p]lant 'start-up' be scheduled for September or**
7 **October to allow wildlife the maximum amount of time to adjust to changes in**
8 **noise levels prior to the start of sensitive activity periods (e.g. breeding season**
9 **staging in February and March for great blue herons)." What is your response**
10 **to this suggestion?**
11

12 A. Dr. Stenberg's suggestion simply isn't practical. The Cogeneration Project is
13 expected to cost approximately \$580 million. The project owner cannot afford to
14 allow that kind of capital investment stand idle for up to 10 months as she has
15 proposed. Each month of delay in commencing operations might cost the project
16 owner \$5-6 million in lost revenues. In addition, delaying the operation of the
17 Cogeneration Project would delay its environmental benefits. In particular, the
18 Refinery would have to continue to generate steam from existing boilers, with their
19 associated air emissions. There are both economic and environmental reasons for
20 bringing the Cogeneration Project on-line as soon as construction is completed.
21

22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37 Furthermore, I find it difficult to believe that a delay in startup would result in any
38 meaningful benefit to the heron colony. Noise engineer David Hessler has
39 performed modeling to conservatively estimate the impact of the operation of the
40 Cogeneration Facility, and he concluded that the Cogeneration Project is not likely to
41 cause any change in the noise levels near the colony (Receptor #7). Likewise, the
42 County's noise consultant Paul Wierzba testified that the impact of noise at the heron
43
44
45
46
47

1 colony will be "insignificant." (Exhibit 45.0 at 6). Even if the Cogeneration Project
2 did cause noise levels to increase by a few decibels in areas occasionally used by
3 herons, I think it is important to keep in mind that the background noise monitoring
4 done by Golder Associates, David Hessler and the County's consultant show that
5 existing noise levels vary over short periods of time by more than 30 dBA, ranging
6 from the mid-40s to the low-80s at Receptor #7, yet the herons do not appear to be
7 affected by these changes. This suggests that even an increase in noise of a few
8 decibels would not adversely affect the heron.
9

10
11
12
13
14
15
16
17
18 It is also important to consider there is a simple cycle power plant – the Point
19 Whitehorn Peaking Station – located much closer to the heron colony than the
20 proposed Cogeneration Project. Simple-cycle plants of this vintage can be louder
21 than combined-cycle facilities such as the one we are proposing, especially when it
22 comes to low frequency noise. The Point Whitehorn plant was not operating during
23 the times Golder, Hessler and the County's consultant were conducting their
24 background noise monitoring, and so the impact of this noise source was not
25 considered in their analyses. The Point Whitehorn facility doesn't operate all the
26 time, but it did operate about 46% and 41% of the time, respectively, during 2000
27 and 2001. This was the same period during which Dr. Stenberg says the heron
28 colony was successfully reestablishing itself. This strongly suggests to me that much
29 lower noise from the more distant Cogeneration Facility would not adversely affect
30 the success of the heron colony. Consequently, I do not believe there is any reason
31 to restrict the Cogeneration Project's operation in the way that Dr. Stenberg has
32 suggested.
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Q. Dr. Stenberg also suggests that "[i]f noise levels are likely to fluctuate during plant operation or maintenance, minimize such starts and stops during sensitive activity periods for wildlife." What is your response to this suggestion?

A. Again, we do not believe it makes sense to restrict the operation of the Cogeneration Project based on concerns about the facility's noise impacting the heron. As I've explained in connection with the previous question, noise monitoring performed by Golder, Hessler and the County's consultant all show that existing noise levels near the heron colony vary considerably over short periods of time. Significantly, these noise level changes don't take into account the intermittent operation of the Point Whitehorn plant. Point Whitehorn has operated intermittently in the past during both the heron's breeding season (February and March according to Dr. Stenberg) and nesting seasons (March through July according to Dr. Stenberg), yet this noise has apparently not adversely affected the colony. There is no reason to believe that the operation of the Cogeneration Project would either.

Douglas Goldthorp's Testimony

Q. In his testimony, Mr. Goldthorp contends, "the public will no doubt come to rely upon [the Cogeneration Project's] continued operation to supply its emerging energy needs. It is therefore clear that the facility is one that must be sited and designed to withstand significant seismic events." Do you agree with Mr. Goldthorp?

1 A. I agree with Mr. Goldthorp that the Cogeneration Project design should taken into
2 account the possibility of seismic events, and should take reasonable and prudent
3 measures to protect the facility from damage in a seismic event. I also agree with
4 Mr. Goldthorp that the seismic issue is a facility reliability issue, not a public safety
5 issue. Reliability is a key to the financial viability of this project, so no one cares
6 more about the facility being able to stay in operation than BP and those who would
7 finance this project.
8
9

10
11
12
13
14
15
16 However, taking reasonable and prudent measures to address the possibility of a
17 seismic event does not mean gathering all conceivable geological and seismic
18 information. The Uniform Building Code contains requirements for the facility
19 design that are based upon the seismic zone in which a facility is to be located. The
20 Project Site is located in Seismic Zone 3, and the facility will be designed
21 accordingly. Bechtel, the engineering contractor, has also performed a detailed site-
22 specific geotechnical analysis. Sanjeev Malushte will address these issues more
23 specifically in his testimony.
24
25
26
27
28
29
30
31
32

33
34
35 **Q. Mr. Goldthorp recommends that a Probabilistic Seismic Hazard Assessment be**
36 **performed prior to the final design of the facility. Do you agree with that**
37 **recommendation?**
38
39

40 A. We do not believe that a site-specific Probabilistic Seismic Hazard Assessment is
41 necessary to appropriately design the facility. We have reached that conclusion
42 based on information provided by Bechtel about their experience building gas-fired
43
44
45
46
47

1 generation projects, as well as BP's own recent experience with projects of this type.
2
3 Sanjeev Malushte will be addressing this issue in more detail in his testimony.
4
5

6
7 **Q. Mr. Goldthorp also recommends that the Certificate Holder implement an on-**
8
9 **going post-construction seismic monitoring program. What sort of monitoring**
10 **do you believe would be appropriate?**

11
12 A Mr. Goldthorp does not describe the sort of monitoring program he is
13 recommending, so it is difficult to respond to his recommendation. What BP is
14 willing to do is conduct a periodic monitoring program similar to the one currently in
15 use at the refinery would be appropriate. Under such a program, various aspects of
16 the facility's structural integrity are checked on a regular basis, and after significant
17 seismic events. Inspections include:
18
19
20
21
22
23

- 24 • Inspect major foundation seams for differential movement,
- 25 • Inspect major foundation grout pads for cracking,
- 26 • Check for proper alignment of major piping shoe supports,
- 27 • Check piping spring hangars for proper position,
- 28 • Check for piping and cable tray misalignment at building penetrations,
- 29 • Review equipment vibration monitoring logs for unusual vibration patterns

30 Problems or discrepancies are identified during the inspections and appropriate
31 repairs are made. These inspections ensure that structural components would
32 continue to serve their intended function.
33
34
35

36
37 The facility will also have vibration monitors on major pieces of rotating equipment.
38
39 Were a significant seismic event to occur, the plant would likely shut down because
40
41
42
43
44
45
46
47

1 vibration monitors would see the tremors as high vibrations and would trip the
2 equipment.
3
4
5

6 **Hal Hart's Testimony**
7

8
9
10 **Q. In this testimony, Mr. Hart recommends that the Site Certification Agreement**
11 **impose "a meaningful time line for site restoration." What is your response to**
12 **that suggestion?**
13
14

15
16 **A.** I believe that imposing this sort of requirement in the Site Certification Agreement
17 would be unnecessary and inappropriate. There is no reason to believe that there
18 will be a problem with a derelict industrial facility at this site, as this is not a stand-
19 alone facility that would be abandoned at the end of the project life. BP has a strong
20 incentive to restore the site so that it could be put to another use. BP has not
21 abandoned derelict equipment and facilities at Cherry Point in the past. On the
22 contrary, BP receives many compliments from visitors about how well the Cherry
23 Point refinery is maintained.
24
25
26
27
28
29
30
31

32
33
34 In any event, it would be premature to require restoration to occur within a specific
35 time period now since we don't know what the plan for future site use will be.
36
37 EFSEC regulations require a final site restoration plan to be submitted to the EFSEC
38 at the time of the restoration, and timing issues are more appropriately addressed at
39 that time.
40
41
42
43
44
45
46
47

1 **Paul Wierzba's Testimony**
2
3
4

5 **Q. At pages 5-6 of his testimony, Dr. Wierzba recommends a "target" that the**
6 **project not result in an increase in ambient noise levels of more than 3 dBA or**
7 **more than 9 dBC. From the applicant's perspective, is that target appropriate?**
8
9

10
11 A. No. Although state law does not require anything more than limiting project noise to
12 60/50 dBA in residential areas (day/night) and 70 dBA in industrial areas, BP has
13 been sensitive to concerns about project noise during the development of this project,
14 and has already gone well beyond the State regulatory requirements to reduce noise.
15 Noise guarantees have been negotiated with the proposed EPC contractor, Bechtel.
16 Bechtel has agreed to guarantee that the noise produced from the Cogeneration
17 Project will not exceed the "Project Only" Noise levels set forth in Table 8 of the
18 Golder Associates Report found in Appendix K. Those guaranteed levels are set
19 forth below for your convenience:
20
21
22
23
24
25
26
27
28
29

30
31
32
33

Receptor	Project Only Noise (dBA)	WAC 173-60 Day/Night (dBA)
1 (I)	51.7	70
2 (R)	44.5	60/50
3 (I)	49.8	70
4 (I)	43.2	70
5 (I)	45.7	70
6 (I)	45.7	70
7 (R)	44.4	60/50
8 (R)	37.8	60/50
9 (R)	42.3	60/50
10 (R)	44.6	60/50
11 (R)	42.2	60/50
12 (I)	65.1	70

34
35
36
37
38
39
40
41
42
43
44
45
46
47

13 (I)	54.4	70
14(R)	47.5	60/50
15 (R)	38.8	60/50

Significantly, this guarantee ensures that noise from the project will be less than 45 dBA at the residential locations north and northwest of the refinery (Receptors 9, 10 and 11) that appear to be the focus of the County's concern.

Dr. Wierzba's recommendation to go beyond that guarantee and limit the change in noise to 3 dBA and 9dBC over background is also problematic because it focuses on the potential change in noise levels compared to the existing background. Noise monitoring done by Golder Associates, David Hessler and the County's consultant all show that that existing noise levels are constantly changing, sometimes quite dramatically. Although the engineers can design the project so that the project's noise will not exceed the guaranteed levels, they cannot control the background. In fact, given the variability in the background levels, it is impossible to predict what the "background" level might be a particular moment. As a result, it is impossible to ensure that the Cogeneration Project will not increase the background level by more than 3 dBA and 9 dBC. David Hessler's testimony will further respond to Dr. Wierzba's recommendations.

END OF TESTIMONY