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**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY

Respondent.

**Docket UE-220066
Docket UG-220067
(Consolidated)**

PREFILED RESPONSE TESTIMONY OF

RANAJIT SAHU

**ON BEHALF OF THE PUYALLUP TRIBE OF INDIANS IN OPPOSITION TO THE
SETTLEMENT STIPULATION AND AGREEMENT ON TACOMA LNG**

SEPTEMBER 9, 2022

1 **PUYALLUP TRIBE OF INDIANS**

2 **PREFILED RESPONSE TESTIMONY OF RANAJIT SAHU IN OPPOSITION TO THE**
3 **SETTLEMENT STIPULATION AND AGREEMENT ON TACOMA LNG**

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1 **PUYALLUP TRIBE OF INDIANS**

2 **PREFILED RESPONSE TESTIMONY OF RANAJIT SAHU IN OPPOSITION TO THE**
3 **SETTLEMENT STIPULATION AND AGREEMENT ON TACOMA LNG**

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5 **LIST OF EXHIBITS**

- 6 Exh. RXS-31 Washington Department of Health, Washington Environmental
7 Health Disparities Map Rankings for communities adjacent to the
8 Tacoma LNG Facility.
- 9 Exh. RXS-32 Order on Motion to Dismiss and for Partial Summary Judgment,
10 PCHB No. 19-087c, 3/26/2021.
- 11 Exh. RXS-33 Section 3.5 – Health and Safety, excerpt of Puget Sound Energy
12 Proposed Tacoma Liquefied Natural Gas Project Final
13 Environmental Impact Statement, 11/9/2015
- 14 Exh. RXS-34 Tarika Powell, *How Industry and Regulators Kept Public in the*
15 *Dark After 2014 LNG Explosion in Washington*, Sightline Institute,
16 2/8/2016.
- 17 Exh. RXS-35 Email from P. Huffman, Director of City of Tacoma Planning and
18 Development Services Department, FW: Summary of PSE LNG
19 Status and attached Tacoma City Council briefing paper regarding
20 City of Tacoma’s review of the Tacoma LNG Project, 8/5/16.
- 21 Exh. RXS-36 Email from J. Lewis, UTC with “PSE LNG Draft Overview.docx”
22 attachment, 4/10/2019 (highlighting added for ease of reference).
- 23 Exh. RXS-37 PSE document describing Tacoma LNG Project, identified as Bates
24 Nos. PSE02708467-PSE02708470, which was produced in
25 discovery by PSE in PCHB Case No. 19-087c.
- 26 Exh. RXS-38 Excerpt (non-confidential) from J. Hogan 30(b)(6) testimony on
behalf of PSE, 1/7/2021.
- Exh. RXS-39 Final Environmental Assessment, SP 20534 Special Permit to
transport LNG by rail in DOT-113C120W rail tank cars, Docket No.
PHMSA-2019-0100, 12/5/2019.
- Exh. RXS-40 Email from Keith Faretra, RE: Revised Draft Letter Response to
PSCAA’s Completeness Letter, 6/30/2017.
- Exh. RXS-41 Excerpt of 30(b)(6) Deposition Testimony of Matthew Stobart on
behalf of CB&I, 2/16/2021.

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Exh. RXS-42 Email chain between Matthew Stobart and others at CB&I discussing options to meet TOTE methane number requirement, 3/15/2017.

Exh. RXS-43 Email chain between Matthew Stobart and others at CB&I discussing impacts of changes in feed gas composition and range of options to address those changes, 3/30/2017.

Exh. RXS-44 Email chain between Thomas Mullen and Matthew Stobart including a discussion of the “levers” available to manipulate the targeted methane number of LNG produced by the facility, 10/4/2019

Exh. RXS-45 Email chain from Bill Steiner, Fwd: FW: 210140-000-PR-TN-00002 - Alternate Feed Gas Composition Review.doc, 4/24/2017.

1 **PUYALLUP TRIBE OF INDIANS**
2 **PREFILED RESPONSE TESTIMONY OF**
3 **RANAJIT SAHU**

4 **I. INTRODUCTION**

5 **Q: Are you the same Ranajit Sahu who submitted prefiled direct testimony in this**
6 **proceeding on July 28, 2022, on behalf of The Puyallup Tribe of Indians?**

7 **A:** Yes. My prefiled direct testimony and twenty-nine supporting exhibits were previously
8 filed in this proceeding on July 28, 2022. That testimony, in which I found that PSE's decision to
9 construct the Tacoma LNG facility at its current location was not a prudent response to meet the
10 ratepayer needs articulated by PSE, and its associated exhibits, are incorporated herein in
11 opposition to the Settlement Stipulation and Agreement on Tacoma LNG.

12 I am competent to provide this testimony and provide it based on my personal knowledge
13 as well as my experience, training, and education. If called to testify verbally before the
14 Washington Utilities and Transportation Commission (WUTC or Commission) regarding the
15 contents of this pre-filed testimony, my testimony would be consistent with this written testimony.
16 My business address is: 311 North Story Place, Alhambra, CA 91801.

17 **Q: Please explain the purpose of your testimony.**

18 **A:** The purpose of this response testimony, and my previously-filed direct testimony, is to
19 present evidence responding to PSE's assertions regarding the prudence of the multiparty
20 settlement for Tacoma LNG.

21 **Q: Please summarize your conclusions on the issues addressed in your testimony.**

22 **A:** As I stated in my direct testimony filed on July 28, 2022, under the Commission-
23 established standards, PSE's decision to construct the Tacoma LNG facility at its current location
24 was not a prudent response to meet the needs articulated by PSE as its rationale for constructing
25 this facility. More specifically, it is my opinion that the absence of information in the record
26 regarding the impacts of the facility and how those impacts could best be mitigated prevents the
Commission from making an informed decision that PSE's decision to construct the Tacoma LNG

1 facility was prudent. Therefore, the Commission should determine that the decision was not
2 prudent.

3 The prefiled testimony of PSE witness Ronald J. Roberts submitted in support of the
4 multiparty settlement for Tacoma LNG on August 26, 2022, includes broad, conclusory, and
5 inaccurate statements.¹ For example, Mr. Roberts claims that the Tacoma LNG facility “will not
6 cause or contribute to human health impacts or inequitably affect surrounding communities” and
7 that PSE did not incur unnecessary costs in developing, constructing, and defending its decision
8 to construct the facility.² My testimony here responds to that assertion (and others) and explains
9 the incorrectness of Mr. Roberts’ claim that PSE’s decision to construct of the Tacoma LNG
10 facility was prudent.

11 **II. ASSESSMENT OF MR. ROBERTS TESTIMONY**

12 **Q: First, do you have any initial comments regarding Mr. Roberts’ testimony?**

13 **A:** Mr. Roberts seems to take umbrage with the Tribe having the audacity to try to protect
14 itself from the health and safety threats that Tacoma LNG poses. My hope was that PSE would be
15 more sensitive to the Tribe’s concerns. And although I have never met him, Mr. Roberts’
16 testimony is peppered with ad hominem personal attacks on me. I will attempt to respond to his
17 testimony in a less vitriolic manner.

18 **A. Mr. Roberts’ qualifications do not support the scope of his opinions.**

19 **Q: Beyond its tone and tenor, do you have an opinion on the scope of the testimony**
20 **presented by Mr. Roberts?**

21 **A:** Yes. I have reviewed Mr. Roberts’ credentials and Mr. Roberts does not appear to be
22 qualified to provide credible testimony (much of which is argumentative rather than factual)
23 regarding air pollutant emissions associated with Tacoma LNG. Further, Mr. Roberts’ does not
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25 ¹ See Exh. RJR-30T.

26 ² See *id.* at 37 and 57.

1 appear to be qualified to opine on the human health impacts in the surrounding community that
2 are caused by Tacoma LNG's emissions.³

3 **Q: Are you qualified to provide such testimony?**

4 **A:** Yes. I have been an air pollution consultant for over 32 years. In that time, I have provided
5 a wide range of air quality consulting and expert services to industrial, non-governmental, and
6 government clients, the latter including United States Environmental Protection Agency and the
7 United States Department of Justice. I have also taught air pollution, health risk assessment, and
8 process safety courses for over two decades. Broadly relevant to the current matter, my experience
9 includes: assessing the generation of various air pollutants from industrial processes, including
10 sources like the flare, vaporizer, and fugitive components at Tacoma LNG; quantifying such
11 emissions; modeling the impact of such emissions on surrounding areas; determining the health
12 risks associated with such impacts on surrounding populations and the environment; monitoring
13 of air pollutants in ambient air; controlling air emissions via work practices including pollution
14 prevention approaches and/or add-on controls, as needed; and assessments of accidental and non-
15 routine risks posed by facilities. This experience is directly relevant to my testimony herein and
16 is buttressed by my educational background (which includes my Ph.D. from Caltech and prior
17 engineering degrees).

18 **Q: What else strikes you about Mr. Roberts' testimony?**

19 **A:** I will get into specific substantive details later in my testimony. That said, one thing that
20 generally stood out to me is that Mr. Roberts' testimony contains several statements that are
21 objectively and demonstrably incorrect. As I described in my prior testimony, I am quite familiar
22

23 ³ For example, in response to the Tribe's concern that "the Tacoma LNG Facility poses a series of alleged human
24 health impacts" Mr. Roberts' opines that the Tribe's "assertion of an inequitable [health] impact is specious because
25 the impacts themselves are negligible." Exh. RJR-30T at 40. Mr. Roberts' testimony on this issue should be afforded
26 no more weight by the Commission than the opinion of a layperson. Similarly, the Commission should reject Mr.
Roberts claim that "any allegations regarding the potential human health impacts associated with the Tacoma LNG
Facility air emissions are baseless." See Exh. RJR-30T at 44-45. The Tribe's claims are not baseless; as I discuss
below, they are founded and legitimate.

1 with development of the Tacoma LNG facility and have reviewed a large number of documents
2 regarding the facility. I interpret the inaccurate statements in Mr. Roberts' testimony to reflect the
3 fact that, to my knowledge, he was not involved in the litigation before Washington's Pollution
4 Control Hearings Board (PCHB) in any way. Nor has he been involved in discussions subsequent
5 to that litigation between the Tribe, PSE, and the Puget Sound Clean Air Agency (PSCAA) to cure
6 permit defects that the PCHB found (agreeing with the Tribe in multiple respects following the air
7 permit litigation).

8 **Q: Can you provide examples demonstrating that Mr. Roberts does not have command**
9 **of the purported facts about which he is testifying?**

10 **A:** Yes. One example is Mr. Roberts' accusation that the Tribe litigated safety issues before
11 the PCHB. In reality, those issues were litigated by a number of environmental groups, including
12 the Washington Environmental Council.

13 Another example is Mr. Roberts' discussion of the Donahue testimony, calling it
14 "deposition testimony."⁴ The Donahue testimony provided with my July 28 testimony was not
15 from a deposition – it was testimony that Mr. Donahue gave directly to the PCHB during the
16 hearing before that tribunal.

17 **Q: Why did Mr. Roberts accuse the Tribe of litigating claims that were actually litigated**
18 **by other parties?**

19 **A:** I do not know, but Mr. Roberts was not involved in the PCHB proceedings so perhaps he
20 relied on inaccurate, second-hand information.

21 **Q: What other misstatements did you identify in Mr. Roberts' testimony?**

22 **A:** As I will discuss in more detail later, Mr. Roberts' testimony demonstrates a
23 misunderstanding of the proceedings before the PCHB. He fails to acknowledge important details
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26 ⁴ See RJR-30T at 61.

1 of the orders issued by the PCHB and he makes erroneous claims regarding the significance of that
2 order.

3 For example, a review of the PCHB’s Order on which Mr. Roberts’ “safety” testimony
4 relies makes clear that the PCHB was assessing SEPA compliance, not whether the community
5 located near Tacoma LNG was safe from an accident (catastrophic or otherwise) at the facility.⁵
6 In fact, far from resolving safety issues, the PCHB punted them to the UTC.⁶

7 **III. WUTC’S UPDATED PRUDENCE STANDARD**

8 **Q: Does your previously filed direct testimony discuss the standard that the WUTC**
9 **utilizes to determine whether ratepayers can be required to support Tacoma LNG through**
10 **rates?**

11 **A:** Yes. My prefiled direct testimony, dated July 28, 2022, discusses my understanding that
12 the Commission applies the reasonableness standard described in *WUTC v. Puget Sound Energy,*
13 *Inc.*, Docket UE-031725 as the “prudence” standard used to determine what costs ratepayers can
14 be required to support.

15 **Q: Are you aware of any developments concerning the scope of the Commission’s**
16 **prudency analysis, as it was described by the Commission in *WUTC v. Puget Sound Energy,***
17 **Docket UE-031725, that have occurred since you submitted your July 28, 2022, testimony in**
18 **this proceeding?**

19 **A:** Yes. On August 23, 2022, the Commission issued a final order (hereinafter “Final Order
20 09”) in *WUTC v. Cascade Natural Gas Corporation*, Docket UG-210755. That order discusses
21 how, in determining the public interest, the Commission will consider factors such as
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24 ⁵ See, e.g., RJR-034 at ¶52 (“The Board does not rule on the wisdom of the proposed project but rather on whether
the EIS gave the agency sufficient information to make a reasoned decision.”); see also *id.* at pp. 27-29.

25 ⁶ See RJR-034 at ¶166 (“The UTC continues to have this regulatory authority and Appellants can address safety
26 concerns through the UTC.”).

1 environmental health and equity as required under Chapter 80.28 RCW.⁷ In Final Order 09, the
2 Commission takes note of the lack of specific guidance regarding its application of the equity
3 analysis that is authorized under RCW 80.28.425(1) and “define[s] and discuss[es] equity at a high
4 level in this Order to clarify the Commission’s definitions and expectations.”⁸ Final Order 09
5 discusses how the Commission envisions an equitable outcome pursuant to the requirements of
6 RCW 80.28.425(1), as informed by the equitable lens of the Clean Energy Transformation Act
7 (CETA).⁹

8 **Q: Does the Commission discuss the principles of equity that it will apply on a case-by-**
9 **case basis in Final Order 09?**

10 **A:** Yes. The Commission adopted the following principles of equity, enumerated by the
11 Washington Office of Equity, and commits to ensuring that systemic harm is reduced rather than
12 perpetuated by WUTC processes, practices, and procedures:¹⁰

- 13 • *Equity requires developing, strengthening, and supporting policies and*
14 *procedures that distribute and prioritize resources to those who have been*
historically and currently marginalized, including tribes;
- 15 • *Equity requires the elimination of systemic barriers that have been deeply*
16 *entrenched in systems of inequality and oppression; and*
- 17 • *Equity achieves procedural and outcome fairness, promoting dignity,*
18 *honor, and respect for all people.*¹¹

19 ⁷ See Final Order 09, Approving and Adopting Settlement Agreement Subject to Conditions, *WUTC v. Cascade*
20 *Natural Gas Corporation*, Docket UG-210755 (August 23, 2022) at Section II, Standard of Review.

21 ⁸ *Id.* at ¶ 53.

22 ⁹ See RCW 80.28.425(1) (“The commission's consideration of a proposal for a multiyear rate plan is subject to the
23 same standards applicable to other rate filings made under this title, including the public interest and fair, just,
24 reasonable, and sufficient rates. In determining the public interest, the commission may consider such factors
including, but not limited to, environmental health and greenhouse gas emissions reductions, health and safety
concerns, economic development, and equity, to the extent such factors affect the rates, services, and practices of a
gas or electrical company regulated by the commission.”)

25 ¹⁰ Final Order 09 at ¶ 55.

26 ¹¹ Final Order 09 at ¶ 54 (citing RCW 43.06D.020(3)(a)).

1 Further, the Commission notes that CETA expresses the Legislature’s intent that “there
2 should not be an increase in environmental health impacts to highly impacted communities.”
3 Under this analysis, the public interest includes: “equitable distribution of energy benefits and
4 reduction of burdens to vulnerable populations and highly impacted communities; long-term and
5 short-term public health, economic, and environmental benefits and the reduction of costs and
6 risks, and energy security and resiliency.”¹²

7 **Q: Does the updated standard of review authorized by RCW 80.28.425 apply to this rate
8 case and the prudence analysis for the Tacoma LNG facility?**

9 **A:** Yes. The discussion of the standard of review in Final Order 09 is relevant to this
10 proceeding. In fact, Final Order 09 specifically refers to the instant case, noting that because the
11 statutory effective date of PSE’s multiyear rate plan is January 1, 2023, the Commission’s review
12 of Dockets UE-220066 and UG-220067 is subject to the requirements of RCW 80.28.425 and the
13 updated public interest analysis.¹³

14 **A. PSE does not acknowledge or address the Commission’s current standard of**
15 **review regarding prudence**

16 **Q: Was Mr. Roberts’ testimony filed after the Commission issued Final Order 09 in the**
17 **Cascade Natural Gas docket?**

18 **A:** Mr. Roberts’ testimony was filed on August 26, 2022, three days after Final Order 09’s
19 service date of August 23, 2022.
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24 ¹² Final Order 09 at ¶ 52 (citing RCW 19.405.010(6)). The Commission acknowledges that CETA applies only to
25 electric utilities but explains that CETA’s objective and language are instructive to the Commission’s regulatory
work as it clarifies its definition of “public interest” to include equity considerations.

26 ¹³ See Final Order 09 at FN 31.

1 **Q: Does Mr. Roberts’ prefiled testimony in support of the Tacoma LNG settlement**
2 **discuss his understanding of the Commission’s prudence standard?**

3 **A:** Yes. Mr. Roberts notes that his prefiled direct testimony dated January 31, 2022, explains
4 his understanding of the prudence standard.¹⁴ Mr. Roberts also supplements his previous
5 explanation of the prudence standard, with a focus on the fact that the prudence analysis is not
6 based on hindsight, but is based on what PSE’s directors and company management knew, or
7 should have known, at the point in time when the decision is made.¹⁵ Mr. Roberts concludes by
8 quoting the Commission’s recent holding that it “can consider whether the Company’s decision
9 was prudent at the time it was made, in light of what the company knew or should have known.”¹⁶
10 On the standard articulated by Mr. Roberts, my prior testimony dated July 28, 2022, incorporated
11 here by reference, shows that the decision to move forward with Tacoma LNG was not prudent
12 based on this standard.

13 **Q: Does Mr. Roberts’ discussion of the prudence standard acknowledge the standard of**
14 **review set forth within RCW 80.28.425 or the Commission’s discussion of the application of**
15 **that standard of review in its Final Order 09?**

16 **A:** No. Though his testimony in support of the multiparty settlement agreement was filed after
17 Final Order 09 was issued by the Commission in *WUTC v. Cascade Natural Gas Corporation*,
18 Docket UG-210755, Mr. Roberts discussion of the prudence standard does not address the
19 Commission’s unambiguous articulation of the factors to be considered by the Commission when
20 it determines whether a rate plan includes fair, just, reasonable, and sufficient rates.

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23 _____
¹⁴ See Exh. RJR-30T at 2 (citing Exh. RJR-1CT at 7-9.)

24 ¹⁵ See Exh. RJR-30T at 2-3.

25 ¹⁶ Exh. RJR-30T at 3 (citing *WUTC v. Avista Corp.*, Dockets UE-200900 *et al.*, Order 08/05, ¶ 267 (Sept. 27,
26 2021)).

1 **Q: Does Mr. Roberts’ testimony otherwise address how the multiparty settlement**
2 **satisfies the standard of review described by the Commission in Final Order 09?**

3 **A:** No. Mr. Roberts limits his discussion of prudence factors to those considered by the
4 Commission in 1994 -- almost 30 years ago. His testimony does not acknowledge or address the
5 Commission’s consideration of factors such as environmental health and greenhouse gas emissions
6 reductions, health and safety concerns, economic development, and equity that are highlighted by
7 the Commissions’ recent adoption of the Washington Office of Equity’s principles of equity. He
8 does not address how the multiparty settlement satisfies the Commission’s commitment to the
9 reduction of systemic harm through the equitable application of its processes, practices, and
10 procedures.¹⁷

11 **Q: Does the multiparty settlement agreement proposed by PSE and the settling parties**
12 **sufficiently address the principles of equity the Commission has adopted as public interest**
13 **factors?**

14 **A:** No. As noted in Final Order 09, the Commission has emphasized that its
15 “purpose is to determine whether the Settlement terms are lawful and in the public interest.”¹⁸ It
16 was not prudent for PSE to move forward with the Tacoma LNG project because at the time it
17 made that decision PSE knew or should have known that the location being considered for the
18 Tacoma LNG facility was in and adjacent to areas already overburdened by pollution and inhabited
19 by vulnerable populations. PSE also knew that its project would emit carcinogens and other
20 pollutants into an already-degraded airshed. PSE also knew that LNG facilities present risks of
21 catastrophic explosions that could cause significant harm to the adjacent community (indeed, the
22 Plymouth LNG incident occurred in 2014, before PSE made any of its key decisions). Despite
23

24 ¹⁷ Exh. RJR-30T at 3 (citing *WUTC v. Puget Sound Power & Light Co.*, Dockets UE-921262, et al., Nineteenth
Supplemental Order at 11 (Sept. 27, 1994)).

25 ¹⁸ Final Order 09 at ¶ 50 (quoting *WUTC v. Avista Corp.*, Dockets UE-080417 and UG-080417 (consolidated),
26 Order 08, ¶¶ 19-20) (emphasis added).

1 this knowledge, PSE continued its development of a facility with disparate impacts that now
2 exacerbates the environmental burden borne by the nearby communities.

3 In short, Tacoma LNG and its impacts are an affront to the Commission’s expressed goal
4 of “promoting dignity, honor, and respect” for the Tribe and adjacent community, and the facts of
5 the facility’s design and construction demonstrate PSE’s failure to address the equitable factors
6 that are considered by the Commission to ensure that the public interest is protected.¹⁹

7 **IV. DISCUSSION OF EQUITIES AND THE PUBLIC INTEREST**

8 **A. PSE chose to ignore known inequities associated with the Tacoma LNG**
9 **project.**

10 **Q: Have you reviewed PSE’s statements regarding its consideration of equity during its**
11 **review of the Tacoma LNG project?**

12 **A:** Yes. PSE admits that it did not consider equity, defined as “the benefits and burdens to
13 Highly Impacted Communities and Vulnerable Populations,” in its decision to construct the
14 Tacoma LNG Facility.²⁰ After admitting that equity was not considered, PSE describes what it
15 believed at the time of the decision – that beyond meeting purported gas system peak shaving
16 needs the facility would provide transportation fuel for marine and trucking industries, and that
17 this “would provide benefits to those living in the communities PSE serves and the greater Puget
18 Sound Region.”²¹ Notably absent is any indication that PSE’s analysis took into consideration the
19 burdens the facility would create for the surrounding communities. PSE attempts to frame its
20 failure to consider the equities as prudent because the Commission’s prudence standard considers
21 what was known at the time of PSE’s decision to build the facility in 2016.²² However, as
22 discussed in my prior testimony, information about the existing environmental burden in areas

23 ¹⁹ See generally Final Order 09 at Section II.

24 ²⁰ See Exh. RXS-16 (PSE Response to Public Counsel Data Request No. 373).

25 ²¹ *Id.*

26 ²² *Id.*

1 surrounding the Tacoma LNG Project was readily available to PSE in 2016.²³ Further, it is well-
2 known and documented that the surrounding community was vocal in expressing community
3 concerns about the project (including communicating those concerns to the WUTC), and related
4 issues of equity prior to 2016. PSE certainly knew or should have known that Tacoma LNG would
5 impact an already-overburdened community, and it admits that it did not consider those impacts
6 because it was focused on the overall benefit “to those living in the communities PSE serves and
7 the greater Puget Sound Region” and not the fact that the adjacent communities would bear all the
8 burdens emanating from Tacoma LNG.

9 **B. Tacoma LNG is actively causing and contributing to human health impacts**
10 **that inequitably impact neighboring communities.**

11 **Q: Please explain how the multiparty settlement agreement does not further the public**
12 **interest and equity goals presented by the Commission in Final Order 09.**

13 **A:** As discussed in my prior testimony, and detailed further here, emissions from the Tacoma
14 LNG facility contribute to disparate impacts by releasing additional pollution to the airshed of
15 already environmentally overburdened adjacent communities. The University of Washington
16 Department of Environmental & Occupational Health Sciences (DEOHS) collaborated with
17 partners across Washington to develop an interactive tool, the Washington Environmental Health
18 Disparities Map (WEHDM), which is hosted by the Washington State Department of Health. The
19 WEHDM ranks the cumulative risk each neighborhood in Washington faces from environmental
20 factors that influence health outcomes.²⁴ I have attached to this testimony the WEHDM’s
21 Environmental Health Disparities rankings assigned to the neighborhoods surrounding Tacoma
22 LNG.²⁵ These maps demonstrate the environmental burdens present in the area. The Tacoma

23 ²³ See Exh. RXS-1T at 18-19.

24 ²⁴ See Washington Environmental Health Disparities Map Project website at
25 <https://deohs.washington.edu/washington-environmental-health-disparities-map-project>.

26 ²⁵ Exh. RXS-31.

1 Tideflats area, where the Tacoma LNG facility is located, is ranked 10 out of 10 for Environmental
2 Health Disparities and the ranks of the surrounding areas range between 5 and 10.²⁶ It is important
3 to note that the overall Environmental Health Disparities rankings are based on four sub-factors:
4 Environmental Exposures, Environmental Effects, Socioeconomic Factors, and Sensitive
5 Populations. When focused on the environmental sub-factors, the communities adjacent to Tacoma
6 LNG are ranked between 8 and 10 (out of 10) for Environmental Effects, and between 7 and 10
7 (out of 10) for Environmental Exposures.²⁷ The information provided by the WEHDM
8 unequivocally shows that the areas impacted by the Tacoma LNG facility are carrying a
9 disproportionate environmental burden.

10 **Q: Does Tacoma LNG impact any communities designated by the Department of Health**
11 **as already experiencing environmental health disparities?**

12 **A:** Yes, Tacoma LNG presents significant negative externalities, including the adverse health
13 impacts associated with routine and non-routine (i.e., upset or malfunction) emissions from the
14 facility and the potential it presents of a catastrophic event. The quantification of these externalities
15 remains unassessed and unquantified even though PSCAA has allowed the facility to commence
16 operations on the remanded permit.

17 1. **Issuance of an air permit does not eliminate Tacoma LNG's**
18 **negative externalities.**

19 **Q: Did Mr. Roberts's testimony miss anything important about the PCHB decision**
20 **regarding Tacoma LNG's air permit?**

21 **A:** Yes. Many things. But that it is not surprising given that he was not involved in that
22 litigation and does not appear to have a background that would equip him to credibly understand
23 and discuss the case, its issues, or the outcome.

24
25 ²⁶ *Id.*

26 ²⁷ *Id.*

1 **Q: What key aspects of the PCHB’s decision are not acknowledged in Mr. Roberts’**
2 **testimony?**

3 **A:** Mr. Roberts neglects to mention that the Tribe prevailed on key issues litigated before the
4 PCHB. Notably, the permit was remanded to the PSCAA for amendment because the Board found
5 its conditions “do not sufficiently ensure that SO₂ emissions will not cause or contribute to
6 NAAQS violations” and that PSE did not present “analysis demonstrating that the threshold
7 exceedances calculated by Dr. Sahu [regarding non-H₂S sulfur in TLNG feed gas] will not cause
8 or contribute to violation of NAAQS.”²⁸ The Board concluded “that evidence showed that TLNG’s
9 impacts from SO₂ emissions will exceed multiple *thresholds* when using the reasonable inputs
10 that Dr. Sahu did for his calculations.”²⁹ I must point out here that the remand of the permit, based
11 on my analysis, baldly contradicts Mr. Roberts’ assertion that PSE is unaware “of any instance in
12 which the Pollution Control Hearings Board agreed with any opinions or arguments offered by Dr.
13 Sahu.”³⁰ I cannot and do not attempt to explain how Mr. Roberts’ was comfortable submitting such
14 erroneous testimony.

15 **Q: Based on the above, can Mr. Roberts credibly conclude that the Tacoma LNG facility**
16 **does not diminish the health of people in its vicinity through emissions of pollutants to the**
17 **air?**

18 **A:** No, he cannot. As I discuss below, Mr. Roberts’ conclusion is baseless and contradicted
19 by the facts. Further, I do not understand him to be an expert on the intersection of air quality and
20 human health impacts.

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24 ²⁸ See Exh. RJR-32 (PCHB Findings of Fact, Conclusions of Law and Order in NOC Issues 4, 4a, 4b, 4c, 4d, 4e, 4f,
4g, 4h, 4i, 4j, 4k, 4o, 4p, 4u, 6, and 8 at ¶¶ 142-144 (emphasis in original).

25 ²⁹ *Id.* at ¶ 145

26 ³⁰ See Exh. RJR-30T at 65.

1 **Q: In testifying that Tacoma LNG does not present disparate impacts to the tribe, Mr.**
2 **Roberts points to the decision of the PCHB. Did the PCHB make any decisions concerning**
3 **environmental justice issues or disparate impacts caused by Tacoma LNG?**

4 **A:** No, Mr. Roberts' testimony is misleading on that point. The PCHB specifically declined
5 to reach (much less resolve) issues concerning environmental justice and disparate impacts from
6 Tacoma LNG because doing so was outside of its jurisdiction:

7 Resolving whether PSCAA's order of approval is contrary to
8 environmental justice principles, including Executive Order 12898
9 and PSCAA's mandates on environmental injustices, would require
10 the Board to adjudicate and/or enforce a federal executive order and
PSCAA plans and policies, matters which the Board has ruled that
it lacks subject matter jurisdiction. Such a conclusion compels the
Board to dismiss Issue 4(l).³¹

11 Notably, the PCHB determined those issues were outside of its jurisdiction *because PSE moved to*
12 *dismiss them from the case on that basis.*³² It is disingenuous for Mr. Roberts to now represent
13 that the PCHB order is dispositive on these issues in the face of PSE's efforts to ensure that the
14 PCHB did not address them.

15 **Q: What can the commission conclude with respect to the findings of the PCHB?**

16 **A:** As a threshold matter, when talking about the environmental externalities that I discussed
17 in my previous testimony, it is important that the Commission recognize that permitted pollution
18 is still pollution. A theme of Mr. Roberts' testimony is that PSCAA's air permit, or the fact that
19 the PCHB reviewed that permit, should somehow satisfy the Commission's inquiry into the
20 equities of building the Tacoma LNG facility. This is a red herring because PSCAA's issuance of
21 the air permit and the PCHB's subsequent review of that permit do not establish that Tacoma LNG
22 does not disparately impact the Tribe.

23 _____
24 ³¹ Exh. RXS-32 (Order on Motion to Dismiss and for Partial Summary Judgment, PCHB No. 19-087c, 3/26/2021) at
36 (internal citation omitted).

25 ³² *Id.* at 34-34 (“PSE moves to dismiss Issue 4(l) [whether order of approval is contrary to principles of
26 environmental justices, including Executive Order 12898 as well as PSCAA's mandate concerning avoiding
environmental injustices], joined by PSCAA, on the basis that the Board lacks jurisdiction to consider it.”).

1 As a practical matter, the Commission should recognize that virtually all facilities emitting
2 air pollution have a Clean Air Act permit that – like Tacoma LNG’s Clean Air Act permit – has
3 been determined to comply with the requirements of the Clean Air Act. However, the pollution
4 emitted by Tacoma LNG is real and has real and adverse impacts even if it is in compliance with
5 all applicable permit conditions. Air permits do not guarantee safety. If they did, there would be
6 no environmental justice communities located near facilities emitting air pollution (but there are
7 many such communities throughout the country).

8 As one example, the documents PSE provided to PSCAA unequivocally demonstrate that
9 Tacoma LNG will emit carcinogens into the Tribe’s airshed. Any non-zero concentration of such
10 carcinogens in the air poses a risk of cancer in humans who breathe that air– even if they are below
11 Washington’s Acceptable Source Impact Levels (ASILs). Carcinogens released by Tacoma LNG
12 include (but are not limited to) benzene, formaldehyde, naphthalene, and several polycyclic
13 aromatic hydrocarbons (PAHs).

14 Because it could only compare Tacoma LNG’s emissions to regulatory thresholds on a
15 pollutant-by-pollutant basis, the PCHB did not address the *cumulative* impacts of those toxic
16 pollutant emissions – for example, for all carcinogens. This is important because Washington
17 Department of Health tools show that the airshed into which Tacoma LNG emits its carcinogens
18 (and other pollutants) is already degraded and over-burdened by pollution -- even before Tacoma
19 LNG began operating. Tacoma LNG’s additional emissions will only make a degraded airshed
20 worse from a health standpoint. This is exactly the outcome that environmental justice principles
21 aim to prevent.

22 In short, air pollution laws and regulations, and the permits that are issued pursuant to them,
23 do not mean that pollution emitted to the air is benign to individuals who breathe air containing
24 the carcinogens and toxic pollutants emitted by the permitted source(s). I say this based on my
25 three-plus decades of experience with the Clean Air Act. A proper assessment of harms to the
26 Tribe and neighborhoods located near Tacoma LNG can only be accomplished by using tools that

1 assess and evaluate the *cumulative* harms of exposure to pollution.³³ This assessment is not
2 rendered moot simply by the act of receiving a permit.

3 **Q: What is the takeaway for the Commission with regard to the PCHB decision?**

4 **A:** The takeaway for the Commission is that the PCHB concluded, after giving deference to
5 the Puget Sound Clean Air Agency, only that the Tacoma LNG air permit complies with the
6 requirements of the Clean Air Act (once certain defects in the permit are cured). The PCHB did
7 not conclude that Tacoma LNG's emissions of air pollutants cannot and will not have disparate
8 impacts to Tribe or the surrounding community. PSE is hiding behind selected quotes from
9 inapposite decisions.

10 **Q: What was the result of the Tribe prevailing on Issue 4e before the PCHB?**

11 **A:** The PCHB ruled that the Clean Air Act permit was deficient as to Tacoma LNG's
12 emissions of VOCs and SO₂. Consequently, the PCHB remanded the permit, ordering that those
13 deficiencies be cured.

14 **Q: Have the deficiencies in the permit been cured?**

15 **A:** No, they have not.

16 **Q: How do you know that?**

17 **A:** In its decision, the PCHB ordered that "[t]he parties are directed to work together
18 expeditiously and efficiently to modify the Permit to add the conditions of installing a CEMS to
19 monitor SO₂ emissions and VOC emissions (at the flare outlet)" consistent with the Board's
20 Findings of Fact, Conclusions of Law, and Order on NOC Issues.³⁴ As a result of the order, the
21 parties have been discussing how the air permit language should be amended to comply with the
22 PCHB's decision. I have been involved in those discussions.

23

24

25 ³³ As I discuss below in my testimony, a Health Impact Assessment (HIA) is one such tool.

26 ³⁴ Exh. RJR-32 at 77.

1 **Q: Has Mr. Roberts been involved in those discussions?**

2 **A:** No, he has not.

3 **Q: Have the parties reached agreement on the modified permit language, as ordered by**
4 **the PCHB?**

5 **A:** No, they have not.

6 **Q: Why not?**

7 **A:** I imagine that different parties have different views on this. In my view, consistent with
8 the PCHB's order, the Tribe has proposed language that better protects the environment and the
9 public from emissions of toxic pollutants and SO₂. To date, PSE has refused to agree to the Tribe's
10 proposed language.

11 **Q: PSE has stated in these proceedings that Tacoma LNG is now operational. Is it**
12 **operating despite the fact the PCHB remanded the air permit?**

13 **A:** Yes. Even though the permit was remanded, it is my understanding that the facility
14 commenced operations in late-January or early-February 2022.

15 2. PSE has avoided development of information that would quantify
16 the actual impacts of the Tacoma LNG Facility on human health.

17 **Q: Earlier you mentioned that the PCHB determined it was precluded from deciding**
18 **issues involving environmental justice or disparate impacts. If the PCHB did not reach or**
19 **resolve Tacoma LNG's disparate health impacts on the Tribe and nearby neighborhoods, is**
20 **there a way of ascertaining those?**

21 **A:** Yes, there is a way of doing that. In Washington, the impacts of a proposed facility on
22 adjacent communities are ascertained through what is called a Health Impact Assessment (or HIA).

23 **Q: What is a Health Impact Assessment?**

24 **A:** A HIA is a process that helps support the required review and analysis of potential health
25 effects of a plan, project, or policy before it is built or implemented. A HIA can provide mitigation
26 and higher-level policy recommendations that may increase positive health outcomes and

1 minimize adverse health outcomes. A HIA is a public health tool that uses available technical and
2 scientific information to help communities understand how plans, projects, and policies affect their
3 health. These studies can also explain how to maximize the likely health benefits and minimize
4 the potential harms of a given project, plan, or policy.

5 **A:** HIAs are routinely performed after the issuance of an EIS. For example, on November 27,
6 2018, Cowlitz County and the Washington State Department of Health issued a Health Impact
7 Assessment for the Millennium Bulk Terminal–Longview, outlining the health effects that
8 proposal would have on the residents of Longview, Cowlitz County. Notably, the EIS for the
9 Millennium Bulk Terminal included a modeled cancer risk rate for new emissions associated with
10 the facility but a HIA was still performed. The EIS for Tacoma LNG, in contrast, included no such
11 modeling or assessment associated with the emissions of all expected toxic air pollutants
12 associated with Tacoma LNG.

13 **Q: Has a HIA been prepared for Tacoma LNG?**

14 **A:** No.

15 **Q: Has the Tribe requested that a HIA be prepared?**

16 **A:** Yes. It is my understanding that, to date, PSE has been unwilling to prepare a HIA.

17 **C. Tacoma LNG presents an undefined, unmitigated, and inequitable risk of**
18 **catastrophic event.**

- 19 1. PSE cannot credibly claim Tacoma LNG poses no existential risk
20 to nearby communities.

21 **Q: Have you reviewed Mr. Roberts' testimony regarding PSE's efforts to design Tacoma**
22 **LNG to ensure it could be built and operated safely?**

23 **A:** Yes, he responds to my prior testimony regarding the fact that Tacoma LNG presents
24 significant safety risks, including the risks of catastrophic accidents and explosion.³⁵

25 _____
26 ³⁵ See Ex. RJR-30T at 52.

1 **Q: Do you agree with Mr. Roberts' claim that the question of the safety of the Tacoma**
2 **LNG Facility has "been put to rest"?**³⁶

3 **A:** No, Mr. Roberts is very wrong about that. I find his assertion that the FEIS and the PCHB
4 decision on the Tacoma LNG Facility's air permit address and resolve the safety issues at the
5 facility to be divorced from the facts in the record. In fact, the FEIS specifically identifies safety
6 risks as one of the "impacts" that the facility presents.³⁷ And with regard to the PCHB decision, as
7 discussed above, when the PCHB reviewed compliance with SEPA it made no determination that
8 Tacoma LNG poses no safety risks to the public.

9 **Q: If there is a catastrophic accident at Tacoma LNG – not a mere design spill – does**
10 **Mr. Roberts' testimony provide assurance to the Tribe and the surrounding community that**
11 **they are safe from injury or loss of life?**

12 **A:** No, I do not see Mr. Roberts discussing worst-case events or catastrophic accidents. Nor
13 can he. His testimony is cabined within the limited "design spill" scenarios that PSE was required
14 to model. The logical fallacy in his testimony is that it conflates code compliance with safety,
15 never directly answering the Tribe's key concern of whether Tribal members and Tacoma citizens
16 are in danger if there is a catastrophic accident (beyond the mere 10-minute design spill assessed
17 by CB&I) at the facility.

18 The 2014 incident in Plymouth, Washington provides the Commissioners with a useful
19 example.³⁸ That facility was also "code-compliant" but still had the incident.³⁹ This is not the only

20 _____
³⁶ Exh. RJR-30T at 52.

21 ³⁷ See Exh. RXS-33 (FEIS Section 3.5 – Health and Safety).

22 ³⁸ Reporting regarding the Plymouth incident questions whether the facility owner properly disclosed information
23 necessary to evaluate the incident to regulators and alleges that the public remained in the dark about details of the
24 incident nearly two years after the incident. See Exh. RXS-34 (Tarika Powell, *How Industry and Regulators Kept*
Public in the Dark After 2014 LNG Explosion in Washington, Sightline Institute (2/8/2016)).

25 ³⁹ Tacoma City Council briefing papers obtained through a Public Records request show that though the Plymouth
26 incident occurred while the Environmental Impact Statement for the Tacoma LNG Project was being prepared by
the City of Tacoma and the City was aware of the incident, that the study of the incident conducted by WUTC and
PHMSA was only issued five months after the issuance of the FEIS so "the affected environment, potential impacts,

1 example of course. The recent, June 2022, Freeport LNG explosion in Texas, in which a 450-foot-
2 high fireball rose to the sky was also “code compliant.”⁴⁰ My previous testimony raised these
3 accidents that occurred at analogous methane liquefaction facilities, but Mr. Roberts’ testimony
4 was conspicuously silent as to those incidents.

5 **Q: Were all the potential safety risks posed by the Tacoma LNG facility considered in**
6 **the design and permitting process?**

7 **A:** No. PSE only looked at higher probability/low-consequence scenarios and chose to ignore
8 the more concerning high-consequence scenarios. This is allowed by PHMSA regulations. No
9 worst-case-scenario risk analysis has been performed for Tacoma LNG. Further, during
10 development of the facility, WUTC staff acknowledged that the “design spill” scenario that PSE
11 did model for the facility – and from which Mr. Roberts’ testimony emanates – does not represent
12 all reasonably anticipatable risks posed by the facility. A UTC memorandum dated July 18, 2018
13 (produced to the Tribe under Washington’s Public Records Act) titled “Overview and Status of
14 the PSE Tacoma LNG Facility” includes a “Staff Background Note” stating that:

15 As indicated in the evaluation process for the much larger export
16 LNG facility proposed for Coos Bay Oregon, **the existing**
17 **regulatory process has a few fundamental flaws regardless of**
18 **ones position on a project.** LNG siting is deemed acceptable if the
19 project can show that any consequences of an accident will not
20 extend beyond its property line. In order to “calculate” the
consequence and impact, the projects use a process called “designed
spills” in order to determine exclusion distances. The Final PSE
Tacoma LNG EIS has the “design spill” concept outlined and there
are numerous mitigation measures in place due to the calculation.
Unlike a “worst case discharge of oil” which would assume all

21 _____
22 and mitigation measures could not be addressed” based on lessons learned from Plymouth. Exh. RXS-35. The
23 briefing paper indicates the City’s understanding that “PHMSA, the Washington State Utilities and Transportation
24 Commission, and the Tacoma Fire Department will all review the final design and proposed operating procedures
25 for the LNG facility.” The City further represented that “[a]uthorizations, if issued by these agencies **will**
26 **incorporate the mitigation and lessons learned from the Williams facility explosion.**” *Id.* (emphasis added).

⁴⁰ See Sergio Chapa, Freeport LNG Blast Created 450-Foot-High Fireball, Report Shows Contractors reported
‘unusual sounds’ on morning of accident, Bloomberg UK, July 12, 2022, available at:
<https://www.bloomberg.com/news/articles/2022-07-12/freeport-lng-blast-created-450-feet-high-fireball-report-shows>.

1 contents of the largest tank, the “design spill” only takes the largest
2 transfer line to develop its model.

3 The modeling of the exclusionary zones and impact outside of the
4 property lines is based on the location of the “design spill” collection
5 points. **This means that a mechanical failure in the loading arm
6 of the bunkering operations would not necessarily be part of the
7 model or exclusionary zone distance.**⁴¹

8 **Q: Can you explain how the “design spill” analysis does not account for all reasonably
9 anticipated risks?**

10 **A:** As the above quote acknowledges, the “design spill” is a standardized scenario in which a
11 small-quantity spill and its low consequences are analyzed. These events are commonly modeled
12 because these types of spills can occur with higher frequency. While this is useful, it does not
13 account for all potential risks presented by methane liquefaction facilities, including those that are
14 more significant in volume and duration – and which would have far greater consequences.

15 **Q: What is the consequence of these shortcomings regarding the “design spill” analysis?**

16 **A:** The UTC memo above points out some of the shortcomings. Additionally, with respect to
17 Mr. Roberts’ testimony, without a complete analysis of all reasonably anticipated risks, PSE
18 cannot claim that Tacoma LNG presents no danger to the public. And, without looking at worst-
19 case scenarios, regulators cannot consider whether mitigation of such risks is even possible. The
20 absence of such information prevents the Commission from making an informed decision as to
21 whether construction of Tacoma LNG is in the public interest, in light of the fact that the nearby
22 community is potentially being put at risk of serious injury if there is a catastrophic accident at
23 Tacoma LNG.

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26 ⁴¹ See Exh. RXS-36 at 2 (highlighting in document added for ease of reference).

1 **D. PSE's interest in selling LNG to be transported by rail expands the**
2 **likelihood and zone of potential catastrophic impacts, and increases health**
3 **impacts associated with Tacoma LNG.**

4 **Q: Beyond the facility polluting the air and creating the risk of a catastrophic accident,**
5 **does Tacoma LNG present any other negative externalities that disparately impact the**
6 **Puyallup Tribe?**

7 **A: Yes.**

8 **Q: And what additional threats does it pose?**

9 **A: PSE has announced aspirations for Tacoma LNG to load rail cars with LNG for**
10 **transportation elsewhere. In a document produced to the Tribe in litigation, PSE indicates plans**
11 **for Tacoma LNG to load LNG onto rail cars in the future.⁴²**

12 In July 2020, PHMSA promulgated the LNG by Rail Rule, which amended the Hazardous
13 Materials Regulations to allow for the bulk transport by rail of Methane, refrigerated liquid,
14 commonly known as liquefied natural gas (LNG).⁴³

15 Following that regulatory change, PSE (through its Civil Rule 30(b)(6) designee) indicated
16 in 2021, that its marketing team has been discussing Tacoma LNG loading LNG onto rail cars to
17 be transported elsewhere.⁴⁴

18 **Q: If PSE's plans are realized and Tacoma LNG provides LNG to be transported by rail,**
19 **why does that impact the Tribe?**

20 **A: Because Tacoma LNG is located on the Tribe's doorstep. First of all, the Commission**
21 **should be aware that the Puyallup Reservation is crisscrossed by train tracks, running both**

22 _____
23 ⁴² See RXS-37 (a document identified as Bates Nos. PSE02708467-PSE02708470, which was produced in discovery
24 by PSE in PCHB Case No. 19-087c, which notes a "[r]ail spur on site [at Tacoma LNG] for future potential rail car
25 loading.").

26 ⁴³ 85 Fed. Reg. at 44995.

⁴⁴ Exh. RXS-38 (PSE designated portions of Mr. Hogan's 30(b)(6) deposition testimony confidential, this excerpt is
not from the portion designated confidential).

1 east/west and north/south.⁴⁵ Tribal members live near the railroad tracks, and important cultural
2 and natural resources are located along the rail lines.

3 Given PSE’s plans and the fact that LNG can now lawfully be transported by rail, there is
4 a likelihood that tank cars filled with LNG will soon be traveling through the Puyallup Reservation
5 to reach Tacoma LNG to load LNG, and then again traverse the Tribe’s reservation to transport
6 the LNG elsewhere.

7 **Q: How does LNG trains traversing the Tribe’s reservation because of Tacoma LNG**
8 **pose a threat to the Tribe, its members, homeland, and resources?**

9 **A:** The risks inherent in the LNG rail traffic occasioned by Tacoma LNG cannot be
10 overstated.⁴⁶ Indeed, PHMSA’s recognition of these risks is illustrated by the fact that the LNG
11 by Rail Rule requires evacuation of a one-mile radius around any incident involving this
12 substance.⁴⁷

13 Further, train accidents are unfortunately common. As the Commission likely knows,
14 Washington has had its share of unfortunate incidents in recent years -- including the 2017
15 derailment of an Amtrak train near DuPont, and the 2020 derailment and fire involving oil train
16 cars in Custer. Train accidents involving combustible fuels present extraordinary risks to rail-
17 adjacent communities. For example, the 2014 Lac-Mégantic accident in Quebec, Canada was
18 caused by the derailment of a 74-car freight train carrying crude oil. Newspaper reports described
19 a 1-kilometre (0.6 mi) blast radius. Forty-two people were confirmed dead, with five more missing
20 and presumed dead because of the fire and explosion of multiple tank cars. Roughly half of the
21 buildings in the downtown area were destroyed and all but three of the thirty-nine remaining
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23 ⁴⁵ See e.g., Exh. GSS-6 (map submitted with the September 9, 2022, testimony of Gary Seleba (Exh. GSS-1T)).

24 ⁴⁶ See generally Exh. RXS-39 (Final Environmental Assessment, SP 20534 Special Permit to transport LNG by rail
25 in DOT-113C120W rail tank cars, Docket No. PHMSA-2019-0100 (12/5/2019)) at Section 4 – Environmental and
Human Health Impacts of the Selected Action and No Action Alternative.

26 ⁴⁷ See 85 Fed. Reg. at 45021.

1 downtown buildings had to be demolished due to petroleum contamination of the townsite.⁴⁸ LNG
2 is more volatile than crude oil and, when burned, emits far more heat. Thus, had the Lac-Mégantic
3 disaster involved LNG, the impacts likely would have been more extensive.

4 **Q: Does Tacoma LNG providing LNG to the rail industry pose any additional negative**
5 **externalities that will be disproportionately foisted upon the Tribe?**

6 **A:** Yes, more air pollution to be suffered by the Tribe. As PHMSA’s rulemaking
7 acknowledges, the transportation of rail tank cars filled with LNG would result in air pollution
8 associated with increased use of diesel-powered trains traversing the Tribe’s Reservation.⁴⁹

9 The air impacts associated with trains coming to and going from Tacoma LNG will not be
10 widely-dispersed. Instead, the majority of those impacts will be suffered by those in proximity to
11 Tacoma LNG and the rail corridors; this means the Puyallup Tribe, its members, and its
12 Reservation.

13 **Q: One last thing regarding Tacoma LNG’s externalities- did you review Mr. Roberts’**
14 **testimony regarding cleaning the Tacoma LNG site – which he calls a “brownfield” – and**
15 **pulling creosote treated piles?**

16 **A:** Yes.⁵⁰

17 **Q: Was the “brownfield” that PSE says it cleaned up a Tribal property?**

18 **A:** No. It is owned by the Port of Tacoma. The Port benefitted from that work, not the Tribe
19 or the surrounding community.

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23 ⁴⁸ See Transportation Safety Board of Canada, Rail transportation safety investigation R13D0054, available at:
<https://www.bst-tsb.gc.ca/eng/enquetes-investigations/rail/2013/R13D0054/R13D0054.html>.

24 ⁴⁹ See Exh. RXS-39 (Final Environmental Assessment, SP 20534 Special Permit to transport LNG by rail in DOT-
25 113C120W rail tank cars, Docket No. PHMSA-2019-0100 (12/5/2019)) at 18.

26 ⁵⁰ See RJR-30T at 41-42.

1 **Q: Do the “benefits” of these actions in any way mitigate the negative externalities that**
2 **you discuss in your testimony?**

3 **A:** No, they do not. That work did nothing to mitigate the air pollution and/or risks of a
4 catastrophic accident that Tacoma LNG presents. Nor does the work described do anything to
5 mitigate the impacts of an accident involving a train transporting LNG from the Tacoma LNG
6 facility.

7 **V. PSE INCURRED UNNECESSARY AND AVOIDABLE COSTS IN DEVELOPING**
8 **AND CONSTRUCTING TACOMA LNG, AND IN DEFENDING ITS DECISION**
9 **TO BUILD TACOMA LNG THAT SHOULD NOT BE BORNE BY**
10 **RATEPAYERS**

11 **Q: What is your reaction to Mr. Roberts’ response to the assertion in your prior**
12 **testimony that PSE sized the Tacoma LNG facility based on six continuous days of need?**⁵¹

13 **A:** Mr. Roberts testimony confirms that PSE did not size the tank to meet ratepayers’ needs.
14 He states that PSE is not aware of any document or decision in which PSE has suggested that
15 vaporization at the LNG Facility would occur on six consecutive days. *See* RJR-30T at 16. Further,
16 Mr. Roberts acknowledges that the region historically experiences cold spells lasting only two to
17 four days and notes that the PSE’s gas delivery data presented in my prior testimony, which shows
18 “peak periods of two and three days in several years” supports PSE’s observations.⁵²

19 I am surprised by Mr. Roberts’ admission that PSE did not base the 8-million-gallon LNG
20 storage tank capacity on six days of consecutive peak shaving need because, as PSE’s calculations
21 show, an 8-million-gallon tank is substantially oversized to meet a need of less than six consecutive
22 days.⁵³

23

⁵¹ See Exh. RJR-30T at 16.

24 ⁵² See RJR-30T at 16; *see also* RXS-1T at 11 (peak gas deliveries table).

25 ⁵³ See Exhs. RXS-28 and RXS-29 (PSE Response to Public Counsel Data Request No 354 and Attachment B
26 thereto).

1 **Q: Why is PSE's agreement that the weather and gas delivery data show only peak**
2 **demand periods of three to four consecutive days significant?**

3 **A:** It is significant because it is not in the public interest to construct a facility with a capacity
4 that significantly exceeds the public's need. PSE has provided no alternative explanation of how
5 that excess capacity is used and useful for those ratepayers. In sum, Mr. Roberts' testimony
6 confirms that the tank is oversized and provides further support for my opinion that ratepayers'
7 needs did not drive PSE's decision to design and construct an 8-million-gallon tank. If the only
8 anticipated use of the excess capacity is to serve customers of the non-regulated entity, the
9 associated costs should not be foisted onto ratepayers.

10 **Q: What should the Commission consider when assessing what portion of costs stem**
11 **from PSE's decision to construct an oversized tank?**

12 **A:** It is important to understand that the costs of constructing an LNG storage tank are not
13 linear, and that the costs increase significantly as the tank capacity increases.

14 **Q: Did you review Mr. Roberts' testimony regarding the legal fees incurred by PSE in**
15 **defending the Tacoma LNG Facility?**⁵⁴

16 **A:** Yes, I did. And though I do not agree with his characterization regarding PSE's legal fees,
17 my understanding is that legal fees fall outside of the scope of the settlement agreement that the
18 Commission is currently deciding, and those may be taken up at a future time depending on the
19 Commission's decision on the prudence question now before it.

20 **Q: Has the Tribe asked Washington ratepayers to pay the legal fees it incurred in**
21 **connection with its challenges concerning Tacoma LNG?**

22 **A:** No, my understanding is that the Tribe has not asked Washington's ratepayers to pay its
23 legal fees incurred in challenges concerning Tacoma LNG.

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26 ⁵⁴ See Exh. RJR-30T at 61.

1 **Q: Have you reviewed Mr. Roberts’ testimony regarding the need for pretreatment of**
2 **natural gas at Tacoma LNG?**

3 **A:** Yes. He disputes my assertion that costs associated with the pretreatment of natural gas
4 prior to its liquefaction at Tacoma LNG are unnecessary and driven by the requirement that the
5 LNG sold to TOTE have a methane number of 80 or lower.⁵⁵ He goes so far as to assert that my
6 testimony that pretreatment requirements were driven by the fuel needs of TOTE is “contrary to
7 all evidence.”

8 **Q: Is Mr. Robert’s correct that your testimony regarding the need for pretreatment at**
9 **Tacoma LNG is “contrary to all evidence”?**

10 **A:** No. My testimony is quite supported.

11 Mr. Roberts’ conflates *some* pretreatment required for equipment protection and function
12 with *all* pretreatment which goes beyond such equipment protection and function. TOTE’s
13 specification was plainly acknowledged to be a driver of some of the pretreatment requirements
14 during conversations regarding facility design. In an email chain with his clients at PSE, Thomas
15 Mullen, an engineer at CB&I (the company that designed and built Tacoma LNG), noted that a
16 statement in a document to be submitted to PSCAA “about removing ethane and propane prior to
17 liquefaction being a requirement due to freezing concerns **is not entirely accurate.**”⁵⁶ He went on
18 to explain that:

19 **[T]he point of the additional design features to accommodate a**
20 **more varied feed gas composition that includes greater**
21 **concentrations of hydrocarbons other than methane (C2+) is to meet**
22 **a fuel quality requirement for the end consumer of the LNG.**
23 **That fuel quality standard is the driver for additional removal**
24 **of heavy hydrocarbons and the subsequent increase in flaring**

25 ⁵⁵ See RJR-30T at 59.

26 ⁵⁶ Exh. RXS-40 (Email from Keith Faretra, RE: Revised Draft Letter Response to PSCAA’s Completeness Letter, 6/30/2017) at 2 (emphasis added).

1 **rate.** An outcropping of this and secondary driver is the potential
2 for freezing of the heavier constituents.⁵⁷

3 Foreshadowing Mr. Roberts' statements to the Commission here, Mr. Mullen concludes by
4 stating that "if the quality driver is to be shied away from, I'd suggest addressing the freezing as a
5 potential increase in C5+ hydrocarbons in the pipeline feed."⁵⁸

6 PSE then acknowledged that TOTE's needs (i.e., removal of C5+ hydrocarbons, which, if
7 retained would reduce the methane number of the LNG made by Tacoma LNG, and thereby not
8 meeting TOTE's specifications) were the pretreatment driver, providing revised language for Mr.
9 Mullen's review that plainly states "[a]dditional design features were added to address possible
10 variations in levels of ethane and propane in natural gas to meet the fuel requirement of the end
11 user."⁵⁹ These additional design features were the extra capacity to remove C5+ hydrocarbons so
12 that a minimum methane number of 80 could be met purely to satisfy TOTE's needs.⁶⁰ There is
13 no need for this C5+ removal need for peak shaving.

14 **Q: Do you understand the "end user" in this context to be PSE's natural gas customers,
15 or TOTE?**

16 **A:** As noted in my prior testimony, the natural gas delivered to Tacoma LNG is pipeline
17 quality and suitable for use by PSE's customers without pretreatment. TOTE is the end user with
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⁵⁷ *Id.* (emphasis added).

20 ⁵⁸ *Id.*

21 ⁵⁹ *Id.* (emphasis added).

22 ⁶⁰ Other evidence demonstrates that design alternatives were available to address the change in feed gas, PSE incurred
23 costs that were unnecessary to serve ratepayers to meet the TOTE fuel specifications. *See e.g.*, Exh. RXS-41, (excerpt
24 of 30(b)(6) Deposition Testimony of Matthew Stobart on behalf of CB&I, 2/16/2021); *see also* Exh. RXS-42 (email
25 chain between Matthew Stobart and others at CB&I discussing options to meet TOTE methane number requirement,
26 3/15/2017); *see also* Exh. RXS-43 (email chain between Matthew Stobart and others at CB&I discussing impacts of
 changes in feed gas composition and range of options to address those changes, 3/30/2017); *see also* Exh. RXS-44
 (email chain between Thomas Mullen and Matthew Stobart including a discussion of the "levers" available to
 manipulate the targeted methane number of LNG produced by the facility, 10/4/2019).

1 fuel quality requirements that necessitate the additional pretreatment requirements referred to by
2 PSE.

3 **Q: Have you reviewed any additional documents that reference TOTE’s fuel**
4 **specifications as a driver for additional treatment processes at Tacoma LNG?**

5 **A:** Yes. An email from Jim Hogan at PSE during this time period reflects PSE’s focus on fuel
6 standards for customers other than TOTE, noting that:

7 It is imperative that we understand the LNG quality requirements
8 that the industry demands. Can you put together a summary of what
9 fuel quality we need to be aiming for (beyond the TOTE FSA
10 spec).⁶¹

11 Another example is a 2017 email from Matthew Stobart to his colleagues at CB&I
12 discussing the status of the alternative feed gas study.⁶² There, Mr. Stobart relays a conversation
13 with Jim Hogan at PSE where he learned that PSE has a contractual obligation to provide TOTE a
14 fuel with a specific methane number:

15 We also discussed at length the quality of the LNG and the impact
16 that has on the accumulated heavies. **We learned from Jim that the**
17 **80 Methane Number (MN) requirement comes directly from**
18 **PSE’s contract with TOTE.** There are no other requirements in
19 this contract (such as max ethane or propane or any other heavies).
20 They just have to meet the methane number.⁶³

21 Additionally, the discussion in the email chain prior to this statement indicates TLNG could
22 still make LNG with a Methane Number lower than 80, but that PSE rejected those options. For
23 example, in an email chain between CB&I employees, Randall Redman asks “does this mean
24 [Case] 5A (Full rate, no excess fuel **but MN of 78**) is out?”⁶⁴ Stobart’s explanation that the TOTE
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26 ⁶¹ Exh. RXS-45.

⁶² Exh. RXS-42.

⁶³ Exh. RXS-42.

⁶⁴ Exh. RXS-42 at 3 (emphasis added).

1 contract requires a methane number of 80 answers that question- PSE would not pursue a design
2 that would not meet TOTE requirements.

3 I am unaware of any documents indicating that PSE's ratepayers require natural gas with
4 a specific methane number. And as Mr. Roberts testified, TOTE's commitment to purchase LNG
5 for marine fuel "was a necessary predicate for the development of the Tacoma LNG Facility..."⁶⁵
6 The contractual requirement that marine fuel supplied to TOTE from Tacoma LNG must meet a
7 methane number of 80 is dispositive evidence that PSE designed and constructed the facility and
8 its treatment processes to produce fuel to meet the TOTE fuel specifications.

9 **Q: Based on the materials discussed above, your July 28 testimony, and your extensive**
10 **review of documents related to the Tacoma LNG facility, is Mr. Roberts' claim that there is**
11 **no significant difference between the gas quality needed for TOTE's engines and the gas**
12 **quality needed for use by PSE's retail gas customers correct?**

13 **A:** First of all, I believe the word "significant" in Mr. Roberts' testimony should really jump
14 out to the Commission. Significant is a very subjective term and allows Mr. Roberts to provide
15 specious testimony that things are similar when, in fact, they are materially different.

16 But the answer is: No, Mr. Roberts' testimony is not correct. If things were as he says they
17 are, then there would be no requirement for "additional design features" that PSE noted were added
18 to address the fuel requirement of the end user TOTE – such as the removal of C5+ compounds in
19 the incoming gas.

20 **Q: Speaking of TOTE's fueling needs, did you review Mr. Roberts' testimony that**
21 **providing fuel to TOTE was a necessary predicate of developing the facility?**⁶⁶

22 **A:** Yes.

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25 ⁶⁵ Exh. RJR-30T at 58.

26 ⁶⁶ Exh. RJR-30T at 58.

1 **Q: Could LNG produced by PSE at another location be used in the TOTE vessels?**

2 **A:** Yes. Once produced, LNG can be transported via cryogenic pipeline or truck, as evidenced
3 by the pipeline located between the Tacoma LNG facility and the TOTE dock, and the LNG truck
4 filling facility at Tacoma LNG.

5 **Q: What is your reaction to Mr. Roberts' testimony about the need for Tacoma LNG to**
6 **provide fuel to TOTE?**

7 **A:** His conclusory response sidesteps the criticism raised in my prior testimony, which is that
8 ratepayers should not bear additional costs incurred by PSE due to the location of the facility when
9 those costs were incurred only to satisfy a need of the unregulated business. The Commission
10 should take into consideration the significant savings to the unregulated side of the project
11 associated with PSE not having to construct and operate a cryogenic supply line or other alternative
12 delivery system to meet TOTE's needs. PSE should not be allowed to shift those costs to
13 ratepayers in the form of an improper subsidy to PSE for-profit operations.

14 **Q: Does this conclude your testimony?**

15 **A:** Yes.

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