

Docket: : A.15-09-013
Exhibit Number : ORA-02
Reference Number : _____
Commissioner : L. Randolph
ALJ : C. Kersten
Witness : Nathaniel Skinner
Mina Botros



**OFFICE OF RATEPAYER ADVOCATES
CALIFORNIA PUBLIC UTILITIES COMMISSION**

**AMENDED PREPARED TESTIMONY
ON THE SAFETY OF LINE 1600**

**APPLICATION OF SAN DIEGO GAS & ELECTRIC
COMPANY AND SOUTHERN CALIFORNIA GAS
COMPANY FOR A CERTIFICATE OF PUBLIC
CONVENIENCE AND NECESSITY FOR
APPLICATION 15-09-013 – PHASE 1**

CLEAN VERSION

San Francisco, California
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1 **I. INTRODUCTION**

2 This exhibit presents the Phase 1 analyses and recommendations of the Office of
3 Ratepayer Advocates (ORA) regarding San Diego Gas & Electric Company and Southern
4 California Gas Company (SDG&E and SoCalGas, hereafter also called “Applicants”)
5 Application for a Certificate of Public Convenience and Necessity. Applicants’ proposed
6 project contains two distinct but related elements: 1) a proposal to derate Line 1600 to a
7 Maximum Allowable Operating Pressure (MAOP) 320 pounds per square inch gage
8 (psig),¹ with a Maximum Operating Pressure (MOP) of 300 psig;^{2, 3} and 2) a proposal to
9 build a new Line 3602.⁴

10 Line 1600 is an existing 16” natural gas pipeline that extends from Rainbow
11 Station (in Fallbrook, north of San Diego) south to Mission Base (in San Diego).⁵ Line
12 1600 was built in 1949. Most of the line has not been previously pressure tested.⁶
13 Applicants propose leaving Line 1600 as a transmission line until 2021, based on the
14 projected in-service date of the proposed Line 3602, which is approximately four years
15 after regulatory approval.⁷

16 Phase 1 of this proceeding consists of Long-Term Need; Planning Assumptions;
17 Standards of Review; Otay Mesa Supply; and Short-Term Line 1600 Safety Compliance
18 (collectively Questions 1- 18,⁸ A, and C⁹). This volume of ORA’s testimony generally

¹ Applicants have asserted that 320 psig would make Line 1600 a distribution line. ORA, as explained in this exhibit, disputes this assertion.

² Updated Testimony of Kohls, Attachment A, Pipeline Safety and Reliability Report, Attachment XI: Line 1600 De-rating Impact Analysis, p. 1. “(SoCalGas/SDG&E propose to “reduce the pressure in the pipeline to an operating pressure of 300 psig (MOP) with an MAOP of 320 psig between Rainbow pressure limiting station and Kearny Villa pressure limiting station.”

³ MAOP means the maximum pressure at which a pipeline or segment of a pipeline may be operated under certain federal requirements. (See 49 CFR Section 192.3 Definitions). MOP is the maximum pressure at which the operator will operate the pipeline.

⁴ Amendment to the Application, pp. 1-2.

⁵ Amendment to the Application, p. 10.

⁶ Amendment to the Application, p. 10.

⁷ Based on the Updated Prepared Testimony of Kohls, p. 26.

⁸ November 4, 2016 Scoping Ruling, pp. 14–18.

1 addresses issues related to the safety compliance of Line 1600 (Scoping Memo questions
2 11, 12, 13, 17, 18, and Supplemental Question A).¹⁰

3 The Phase 2 scope of the proceeding includes the need for alternative projects,
4 including SoCalGas/SDG&E's proposal to construct Line 3602, which would consist of
5 approximately 47 miles of new 36 inches (") natural gas pipeline extending from
6 Rainbow Station to Marine Corps Air Station Miramar.¹¹ Phase 2 of this proceeding is
7 anticipated to begin later this year, and is not part of this testimony.

8 ORA submitted testimony on April 17, 2017, making safety recommendations
9 in reliance upon information provided in SoCalGas/SDG&E's response to Data
10 Request 6, Question 12, and later confirmed in their response to Data Request 19,
11 Question 7 about approximately half a mile of weakest segments on Line 1600. After
12 ORA submitted its testimony, SoCalGas/SDG&E updated these data responses,¹²
13 focusing on this safety information.¹³ The utilities' updated response changed the
14 information to suggest those weakest segments are stronger.¹⁴ ORA is providing the
15 utilities' amended and corrected responses in two different sets of supporting
16 attachments,¹⁵ as well as additional discovery propounded by ORA after

² December 22, 2016 Revised Scoping Ruling, pp. 7-9.

¹⁰ Questions 11, 12, 13, and 17 are from the November 4, 2016 Scoping Ruling, pp. 17-18. Supplemental Question A is from the December 22, 2016 Revised Scoping Ruling, p. 8.

¹¹ As provided in the November 4, 2016 Scoping Ruling, pp. 18-21. Phase 2 consists of the Need, Purpose, Cost, and Proposed Line 3602 Safety Compliance; Alternatives to, and Cost Effectiveness of, Line 3602; Market and Rate Impacts; Affiliate Transaction Rules; Environmental Impacts; and Cost Cap. As also provided in the November 4, 2016, Scoping Ruling, p. 24, CEQA is connected to both Phase 1 and Phase 2, with Phase 2 commencing after completion of the draft Environmental Impact Report, and the final Environmental Impact Report completion before Phase 2 briefs are due.

¹² SoCalGas/SDG&E First and Second Updated Responses to ORA DR-19, Question 7. *See ORA-04, Additional Supporting Attachments to ORA-02. See Chronology Section (provided toward the end of the introduction) points 14 and 16.*

¹³ *See Chronology, points 4, 7, and 8.*

¹⁴ SoCalGas/SDG&E First and Second Updated Responses to ORA DR-6, Question 12. *See ORA-04-C, Additional Confidential Supporting Attachments to ORA-02.*

¹⁵ One set consists of data marked by SoCalGas/SDG&E as confidential.

1 SoCalGas/SDG&E issued the revised discovery. ORA has provided a separate set of
2 redlined footnotes in this testimony as citation support for the updates.

3 At the time SoCalGas/SDG&E filed their application to derate Line 1600 and
4 build Line 3602, at least approximately 0.5 miles of Line 1600 did not have certain
5 safety information that was traceable, verifiable, and complete. To fill in these
6 information gaps along the 0.5 miles, SoCalGas/SDG&E assumed conservative values
7 that they call “conservative default values”. SoCalGas/SDG&E’s application proposed
8 that Line 1600’s Maximum Allowable Operating Pressure (MAOP) should be 320
9 psig. At this new MAOP SoCalGas/SDG&E told the Commission that Line 1600
10 would operate at less than 20% Specified Minimum Yield Strength (SMYS). In fact,
11 at Applicants’ proposed MAOP, certain of these assumed values would leave Line
12 1600 at *greater than* 20% SMYS for the entire length of those 0.5 miles. As proposed
13 at the time of the Application and unless the information updated in June 2016 is
14 accurate, the proposed derating of Line 1600 would not be in compliance with 49 Code
15 of Federal Regulations (CFR) 192 and Public Utilities Code Section 958.
16 SoCalGas/SDG&E’s application and testimony did not identify this problem with their
17 assumed values to the Commission or to parties.

18 Applicants used a High Pressure Database to keep a record of Line 1600’s
19 safety attribute data that could be used to calculate the MAOP of the line. Two years
20 after Applicants deemed their MAOP Validation effort complete, they apparently still
21 did not have complete records for Line 1600 in their High Pressure Database.

22 As an illustration of their acknowledgement that they assumed some of Line
23 1600’s safety information without telling the Commission or the parties to this
24 proceeding, Applicants disclosed the following post-testimony response to ORA’s data
25 request in which ORA asked for clarification in light of Applicants’ post-testimony
26 updates. (Emphasis added.):¹⁶

¹⁶ SoCalGas/SDG&E Response to ORA DR-89. See *ORA-04-C, Additional Confidential Supporting Attachments to ORA-02. See Chronology, point 16.*

1 *ORA appears to seek information regarding why Applicants concluded that de-rating*
2 *Line 1600 to a 320 psig MAOP would result in all segments being under 20% SMYS,*
3 *thus rendering Line 1600 a distribution line under 49 CFR § 192.3, at a time when the*
4 *High Pressure Database still contained conservative default values for certain*
5 *segments of Line 1600. Based upon what was known about Line 1600’s construction,*
6 *maintenance and operation, Applicants were confident that the weakest segments were*
7 *constructed in 1949 using the original A.O. Smith pipe* (wall thickness 0.250 and yield
8 strength of 52,000) and that later installed segments were built to withstand equal or
9 greater pressures (with equivalent or greater wall thickness and/or yield
10 strength). *Applicants intended to confirm this assumption before de-rating Line 1600, if*
11 *approved by the Commission, either through records review and/or field data*
12 *collection, non- destructive testing or destructive testing; if the assumption was not*
13 *correct, then Applicants would have replaced the pipe segments before de-rating Line*
14 *1600.*

15 Also in response to ORA’s discovery regarding SoCalGas/SDG&E’s post
16 testimony updates, Applicants stated that “the data requests received regarding Line
17 1600 afforded an opportunity to review the High Pressure Database and input
18 additional updates between May and June 2016.”^{17 18} Specifically regarding the
19 approximately half a mile of Line 1600’s weakest segments identified by ORA,
20 SoCalGas/SDG&E have stated that:

21
22 [T]he High Pressure Database was assigned conservative values for the
23 segments noted in ORA DR-84 Questions 1 to 6. When a wall thickness or
24 grade value is not completely substantiated through installation records in the
25 High Pressure Database, it is conservatively assigned a wall thickness and grade

¹⁷ SoCalGas/SDG&E have stated to ORA through discovery that they have kept their records related to calculation of the Maximum Allowable Operating Pressure of Line 1600 in a “High Pressure Database”. See SoCalGas/SDG&E Response to ORA DR-84, Question 11. See ORA-04-C, *Additional Confidential Supporting Attachments to ORA-02*.

¹⁸ SoCalGas/SDG&E Response to ORA DR-87, Question 2a. See ORA-04, *Additional Supporting Attachments to ORA-02*.

1 value that provides a margin of safety. The conservative value was assigned
2 based on the diameter and year of installation, and was appropriately reflected
3 in the High Pressure Database at the time of the May 12, 2016 response to ORA
4 DR-6, Q12 was prepared and submitted.”¹⁹

5
6 SoCalGas/SDG&E added that the updates are “corrections of inaccurate
7 information” and the “data was taken from a database that had not been fully updated
8 to reflect information learned from research of historical records and to reflect recent
9 construction activity”.²⁰

10 In other words, before June 2016, the High Pressure Database contained
11 assumed values for the 0.5 miles of Line 1600’s weakest segments identified by ORA.
12 Applicants’ did not update these records until *after* they submitted their Application
13 and testimony. ORA’s concerns in its initial version of testimony dated April 17,
14 2017, regarding these 0.5 miles of pipe were substantiated by Applicants’ post-
15 testimony data responses regarding Applicants’ post-testimony updates.²¹

16 Prior to serving its testimony, ORA twice attempted to question discrepancies
17 between discovery responses provided by SoCalGas/SDG&E regarding pipeline
18 characteristics, which gave the Applicants the opportunity to address the discrepancies.
19 The first time, in response to ORA Data Request 19, Question 7, the Applicants
20 represented to ORA that the response to ORA Data Request 6, Question 12 “is the
21 current status of Line 1600, which accounts for changes to the pipelines due to various

¹⁹ SoCalGas/SDG&E Response to ORA DR-87, Question 2b. *See ORA-04, Additional Supporting Attachments to ORA-02.*

²⁰ SoCalGas/SDG&E First and Second Amended Responses to ORA DR-6, Q12. *See ORA-04-C, Additional Confidential Supporting Attachments to ORA-02.*

²¹ SoCalGas/SDG&E completed MAOP validation in June 2013. The additional records were not input into the High Pressure Database until three years after MAOP validation had been completed, although Applicants have asserted that the High Pressure Database is continually evaluated and updated. *See response to ORA Data Request 87, Question 2a.*

1 reasons, such as replacements or relocations.”²² Applicants responded to ORA Data
2 Request 19, Question 7 on July 15, over one month after updating their High Pressure
3 Database. Hence, Applicants represented to ORA that the old High Pressure Database
4 information regarding the 0.5 miles of Line 1600’s weakest segments was the “current
5 status of Line 1600”. This response was provided more than one month after
6 SoCalGas/SDG&E’s June 13th, 2016 updated response to SED’s data request, which
7 asked for the same information requested by ORA.²³

8 As the Applicants’ first and second amendments to ORA Data Request 6,
9 Question 12 demonstrate, Applicants’ statement regarding the 0.5 miles of Line 1600’s
10 weakest segments was in error and not corrected until after ORA issued its testimony
11 in April 2017. ORA identified discrepancies between Applicants’ responses to SED
12 Data Request 3, and ORA Data Request 6, and asked SoCalGas/SDG&E to explain
13 them.²⁴ However, Applicants’ response did not explain the discrepancies.²⁵
14 SoCalGas/SDG&E also amended the response to SED Data Request 3, but that
15 response also does not identify what drove the changes between the original and
16 amended responses.²⁶

17 Regarding the timing that Applicants actually updated their safety attributes on
18 Line 1600, ORA can discern the following. SoCalGas/SDG&E did not update their
19 High Pressure Database with the post-ORA testimony data response information

²² SoCalGas/SDG&E Responses to ORA DR-19, Question 7.

²³ See *Chronology, points 5 and 8*.

²⁴ In Data Request 25, Question 5, ORA asked, “explain why the 192619(A1) value [differs], given the response to ORA DR-6, Q12, where SoCalGas/SDG&E stated the longitudinal joint factor is 1.0.” ORA is using the word [differs] here to mask information identified by SoCalGas/SDG&E as confidential.

²⁵ See ORA DR 25, Question 5, where SoCalGas/SDG&E stated “Please see response to Question 1 above.” The response to Question 1 states “The attached excel file appends the requested additional columns. Please note that the attachment also reflects the updates provided to ORA on August 4, 2016.”

²⁶ SoCalGas/SDG&E original and amended Responses to SED DR-3, Question 2. See *ORA-04, Additional Supporting Attachments to ORA-02*.

1 regarding the weakest segments on Line 1600 until June 2016.²⁷ This means that for
2 over 9 months from the time they filed their Application, SoCalGas/SDG&E's own
3 data showed that the proposal to derate Line 1600 to 320 psi left Line 1600 as a
4 transmission pipeline, a fact which was never stated in its Application or Testimony.
5 Furthermore, as identified in the response to SED Data Request 3, the segments of
6 Line 1600 from engineering stations 17-131 were not replaced until SoCalGas/SDG&E
7 was ordered to do so by the Commission.²⁸ Up until the Commission's Order,
8 SoCalGas/SDG&E did not replace this segment of Line 1600, which means that Line
9 1600 would have operated as a transmission line under the Applicants' proposal; not as
10 a distribution line. Given the information Applicants had at the time the Application
11 was filed, Applicants' proposal would not meet the requirements of California Public
12 Utilities Code Section 958 to pressure test or replace Line 1600.

13 Specifically, the chronology below shows the events in which Applicants
14 updated safety related information on Line 1600.

15 **Chronology**²⁹

- 16 1. September 30, 2015 – Application filed stating Line 1600 should be
17 derated to 320 psi.
- 18 2. March 31, 2016 – Amendment to the Application filed.
- 19 3. April 27, 2016 – ORA issues Data Request 06, requesting amongst
20 other things, the design specifications of Line 1600,
- 21 4. May 12, 2016 – SoCalGas/SDG&E respond to ORA Data Request
22 06, providing information demonstrating that the design based

²⁷ SoCalGas/SDG&E Responses to ORA DR-6, Question 12, and SoCalGas/SDG&E Responses to ORA DR-84. Also see Chronology Section, point 16. See *ORA-04, Additional Supporting Attachments to ORA-02*.

²⁸ Resolution SED-01.

²⁹ This chronology extensively references SoCalGas/SDG&E's responses to ORA Data Requests 6, 19, and 25, as well as SED Data Request 3. This discovery can be found in the supporting attachments and confidential supporting attachments to ORA-02 and the supporting attachments and confidential supporting attachments to the amendment to ORA-02 (as ORA-04 and ORA-04-C). References to the information is contained in the text of this chronology.

1 MAOP of Line 1600 would exceed 20% SMYS at 320 psi. *See*
2 *ORA-02-C Confidential Supporting Attachments, pp. 6-7.*

- 3 5. May 31, 2016 – SED issues Data Request 3, requesting amongst
4 other things, a segment by segment engineering analysis of Line
5 1600 with any unknown pipeline characteristics identified and any
6 assumed values detailed.
- 7 6. June 13, 2016 – SoCalGas/SDG&E responds to SED-3 with
8 partially updated information.
- 9 7. June 30, 2016 – ORA issues Data Request 19, requesting amongst
10 other things why there were discrepancies between the data
11 provided in response to ORA-6 and the record of the primary
12 features of Line 1600 provided in ORA Data Request 14.
- 13 8. July 15, 2016 – SoCalGas/SDG&E respond to ORA-19.
14 SoCalGas/SDG&E responded that the response to ORA-6 was the
15 “current” information. *See ORA-02-SA Supporting Attachments, p.*
16 *59.*
- 17 9. July 29, 2016 – ORA issues Data Request 25, asking for class
18 location information to be appended to SED-3. ORA also asks
19 about the discrepancies between ORA-6 and SED-3.
- 20 10. August 2, 2016 – SoCalGas/SDG&E amend the response to SED-3.
21 No amendment or update to ORA-6 was provided.
- 22 11. August 12, 2016 – SoCalGas/SDG&E provided the updated class
23 information to SED-3 based on ORA Data Request 25. Part of DR
24 25 asked SoCalGas/SDG&E to respond to the Line 1600 safety
25 attribute discrepancies identified by ORA between ORA-6 and
26 SED-3 as “Please See Response to Question 1 above.” ORA Data
27 Request 25, Question 1 requested that SoCalGas/SDG&E
28 supplement SED-3 with class location information. *See ORA-04*
29 *Supporting Attachments, p. 4.*

- 1 12. April 17, 2017 – ORA issues the original version of its testimony.
2 At this time, SoCalGas/SDG&E have not informed ORA that their
3 response to ORA-6 is outdated, and have not updated their response
4 to ORA-19 which said that the response to ORA-6 was the
5 “current” information.
- 6 13. April 27, 2017 – SoCalGas/SDG&E update the responses to ORA-
7 6, ORA-19, and ORA-25. SoCalGas/SDG&E claim in their April
8 27, 2017 amendment to ORA-19, that based on their original
9 response to ORA-25 in 2016, ORA should have known that ORA-6
10 was outdated and not accurate, and Applicants also claim that ORA
11 should have known that the information in ORA-25 superseded
12 ORA-6.³⁰
- 13 14. May 5, 2017 – ORA issues Data Request 84, requesting underlying
14 materials supporting the SoCalGas/SDG&E updated information.
- 15 15. May 22, 2017 – SoCalGas/SDG&E responds to ORA-84.
16 SoCalGas/SDG&E provide a second update to ORA-6 that
17 corrected the first update that SoCalGas/SDG&E issued on April
18 27, 2017.³¹ SoCalGas/SDG&E confirm in response to ORA DR-84
19 that they did not update the half mile of weakest segment safety
20 information on Line 1600 until June of 2016. *See ORA-04-C*
21 *Confidential Supporting Attachments, p. 39.*
- 22 16. June 2, 2017 – SoCalGas/SDG&E respond to ORA-89.
23 SoCalGas/SDG&E state that they assumed that if the Commission
24 approved derating Line 1600, they would then find or collect
25 information substantiating that Line 1600 would operate below 20%

³⁰ SoCalGas/SDG&E First and Second Updated Responses to ORA DR-19, Question 7. *See ORA-04, Additional Supporting Attachments to ORA-02.*

³¹ *See ORA-04-C, Additional Confidential Supporting Attachments to ORA-02.*

1 SYMS, or if not, the segments would have been replaced before
2 derating. *See ORA-04 Supporting Attachments, p. 16.*

3 17. June 2, 2017 – SoCalGas/SDG&E respond to ORA-88.³² Amongst
4 the responses SoCalGas/SDG&E confirm that they “are not aware
5 of any other data request responses that require updating as a result
6 [of the updates to ORA-6].” *See ORA-04 Supporting Attachments,*
7 *pp. 7-12.*

9 II. SUMMARY OF RECOMMENDATIONS

- 10 • To prioritize the safe operation and integrity of Line 1600, in
11 compliance with applicable safety requirements, ORA proposes a new
12 alternative that takes the following four steps.³³ Each step should be
13 done in order and each previous step should be completed before the
14 next one begins.

15
16 1) The Commission should investigate the recordkeeping practices of
17 SoCalGas/SDG&E on the entirety of Line 1600. At the time they
18 filed their application, SoCalGas/SDG&E’s records showed that
19 approximately 0.5 miles of Line 1600 would exceed a 20% Specified
20 Yield Minimum Strength (SYMS) at their proposed 320 psig
21 MAOP. SoCalGas/SDG&E did not inform the Commission or
22 parties that their proposal was based on assumed safety information.
23 They also did not inform the Commission or parties that if the
24 Commission first approved their proposed Line 1600 MAOP, they
25 later planned to find the records or other information or
26 substantiation to show these 0.5 miles would operate at less than
27 20% SMYS, or if they could not find such information or
28 substantiation, they would replace these segments.³⁴ As such, the
29 Applicants’ proposal meant Line 1600 remained a transmission line
30 as defined under 49 CFR Section 192.3. Consequently, Applicants

³² SoCalGas/SDG&E Response to ORA DR-88. *See ORA-04 Supporting Attachments, pp. 7-12.*

³³ ORA recommends that the Commission require SoCalGas/SDG&E to provide the total cost estimate of this alternative, including an itemized cost estimate of each step. ORA also recommends that this alternative be included as one of the reasonable range of alternatives subject to CEQA review.

³⁴ SoCalGas/SDG&E Response to ORA DR-89. *See ORA-04-C, Additional Confidential Supporting Attachments to ORA-02.*

1 proposed a project that would violate Public Utilities Code 958
2 because that requirement provides that all transmission lines be
3 pressure tested or replaced, and Applicants proposed to do neither of
4 these things to Line 1600.
5

6 After this investigation, and assuming that no new information
7 becomes available indicating that further replacements are needed; at
8 each line connecting with Line 1600 which has a pressure higher
9 than Line 1600's proposed de-rated MAOP of 320 psig, add a
10 pressure regulator, two monitoring valves, and a pressure relief
11 valve. SoCalGas/SDG&E should be required to provide an update
12 including a map with locations of the replacement segments,
13 regulators and valves.

- 14 2) Require SoCalGas and SDG&E to seek a waiver from the Pipeline
15 Hazardous Materials Safety Administration (PHMSA) to pursue
16 pressure testing with gas at or below the current MAOP on Line
17 1600 of 512 psig, as provided in the third step;
- 18 3) Pursuant to the PHMSA waiver, pressure test Line 1600 with gas at
19 pressures at or above 487.5 psig, which is 1.5 times the reduced
20 MAOP proposed in the next step;
- 21 4) Reduce the MAOP³⁵ of Line 1600 to 325 psig, which is 20% of the
22 Specified Minimum Yield Strength³⁶ (SMYS) of Line 1600.³⁷
- 23 • Line 1600, if derated to 320 psig, as proposed by Applicants, is
24 nevertheless required to remain a transmission line pursuant to federal
25 safety requirements.³⁸
 - 26 • The Commission should find that: 1) the Applicants' proposal to de-rate
27 Line 1600 did not follow certain applicable federal or state safety
28 requirements from the time of the filing of the Application until June 13,
29 2016; 2) SoCalGas/SDG&E's proposal violated Title 49 of the Code of
30 Federal Regulations (CFR) Sections 192.619, as well as California
31 Public Utilities Code Section 958 by proposing to leave untested and
32 unreplaced a transmission pipeline that did not already have a valid

³⁵ Maximum Allowable Operating Pressure is defined in 49 CFR 192.3 as "the maximum pressure at which a pipeline or segment of pipeline may be operated under this part."

³⁶ SMYS is the Specified Minimum Yield Strength. SMYS is "the stress value used to determine how much pressure a pipe can handle before it weakens and deforms permanently." See, <http://sciencing.com/calculate-smys-5332072.html>

³⁷ For more detail on this proposal, see Section III.

³⁸ Analysis supporting this point can be found in Section IV.

1 pressure test; and 3) Applicants’ proposal to de-rate Line 1600 to a
2 distribution line did so without properly establishing MAOP in
3 compliance with 49 CFR Section 192.621, which sets the MAOP
4 calculation requirements for distribution lines.

- 5 • SoCalGas/SDG&E should be required to update their Pipeline Safety
6 and Enhancement Plan (PSEP) Decision Tree.³⁹
- 7 • The Commission should consider the safety consequences of
8 SoCalGas/SDG&E’s inconsistent statements in its own testimony and
9 data responses on one hand, and other documents in this Application on
10 the other hand, about the pressure at which Line 1600 could be
11 hydrotested, and the implications that those inconsistent statements have
12 on the MAOP on Line 1600 and throughout the rest of the PSEP
13 program.⁴⁰
- 14 • The Commission should consider the safety consequences of
15 discrepancies between certain SoCalGas/SDG&E data responses to
16 Commission staff who work for different organizations within the
17 Commission.⁴¹

18 **III. ORA’S PROPOSAL TO ENSURE LINE 1600 COMPLIES WITH** 19 **APPLICABLE SAFETY REQUIREMENTS**

20 In order to ensure compliance with federal and state safety regulations, and
21 remediate and enhance the safety of Line 1600, ORA recommends that the Commission
22 order the Applicants to take the four steps identified under the first bullet in the summary
23 above. This section provides more detail and rationale underlying each of the four steps.
24 ORA recommends that the Commission require SoCalGas/SDG&E to provide a plan via
25 testimony and workpapers, consistent with this recommendation, which would be subject
26 to discovery and review by intervenors and the Commission.

27
28 *Step 1: The Commission should investigate the records of*
29 *SoCalGas/SDG&E on the entirety of Line 1600, and order SoCalGas/SDG&E to*
30 *replace all segments of Line 1600 where they assumed different pipeline*
31 *attribute values at the time of their filing than the current Line 1600 attribute*

³⁹ For more detail on this proposal, see Section V.A.

⁴⁰ For more detail on this proposal, see Section V.B.

⁴¹ For more detail on this proposal, see Section V.C.

1 values shown in Applicants' High Pressure Database;⁴² unless the Commission
2 is satisfied that the weakest segments are in fact equal in strength or greater
3 than the majority of Line 1600, and; at each line connecting with Line 1600 that has
4 a pressure higher than Line 1600's proposed de-rated MAOP of 320 psig add a pressure
5 regulator, two monitoring valves, and a relief valve.
6

7 Subsequent to ORA's service of its opening testimony, SoCalGas/SDG&E updated
8 responses targeting the very discover that ORA replied upon.⁴³ ORA recommended
9 that, in order to ensure the integrity of Line 1600, the weakest segments of Line 1600,
10 totaling approximately 0.5 miles, should be replaced in order to esnrue the integrity of the
11 line. ORA's initial testimony had identified that these segments were weaker than the
12 majority of Line 1600, were one reason that Applicants' proposal would violate certain
13 federal and state safety requirements, and are identified in the Confidential Workpapers
14 of M. Botros, tab "Low Design Feet - CONF". Applicants then issued their own
15 discovery of ORA, asking ORA to admit, based upon Applicants' unexplained updates,
16 that the segments Applicants' targeted in its updated data responses were no longer the
17 weakest ones, and that the updated values would no longer leave these segments of Line
18 1600 at above 20% SMYS.⁴⁴ These segments have historically operated at higher hoop
19 stresses than most of the rest of Line 1600, and their replacement will increase the safety
20 margins on Line 1600. Applicants updated post testimony data responses subsequently
21 asserted that their initial pre-testimony discovery response was in error.⁴⁵ However,

⁴² ORA has discovered that certain pipeline attributes on the approximately 0.5 miles of pipeline at the time of Applicants' filing would establish a lower MAOP on Line 1600 than the MAOP presently established by their High Pressure Database. By "different pipeline attribute values", ORA means those attribute values that would result in a different MAOP than their updated counterparts. SoCalGas/SDG&E Response to ORA DR-84, Question 1, regarding the High Pressure Database. *See ORA-04-C, Additional Confidential Supporting Attachments to ORA-02.*

⁴³ SoCalGas/SDG&E First and Second Updated Responses to ORA DR-06, Questions 12 and 14; and SoCalGas/SDG&E First and Second Updated Responses to ORA DR-19, Question 7. *See ORA-04, Additional Supporting Attachments to ORA-02 and ORA-04-C, Additional Confidential Supporting Attachments to ORA-02.*

⁴⁴ SoCalGas/SDG&E Data Request to ORA DR-06, Question 4. *See ORA-04, Additional Supporting Attachments to ORA-02.*

⁴⁵ Updated response to ORA-06, Question 12, amended April 27, 2017 and amended again May 22, 2017. *See ORA-04-C, Additional Confidential Supporting Attachments to ORA-02.*

1 SoCalGas/SDG&E were aware as of the time they filed the Application in this
2 proceeding that their High Pressure Database assumed certain values for these targeted
3 segments despite the completion of their Maximum Allowable Operating Pressure
4 (MAOP) validation process in 2013.^{46 47} It was only in 2016, apparently after ORA and
5 SED conducted discovery, that SoCalGas/SDG&E found records purporting to
6 substantiate their asserted MAOP rather than the lower assumed values they had been
7 using, and then to ORA through SED’s discovery. However, SoCalGas/SDG&E did not
8 update the discovery provided to ORA and the underlying data supporting the update
9 until May 2017. Based on the responses to discovery, ORA understands that
10 SoCalGas/SDG&E did not inform SED or ORA that the changed information provided in
11 response to SED Data Request 3, was in fact updated from what had been provided a
12 month earlier to ORA. Instead, when ORA questioned differences between supporting
13 documentation provided in response to ORA’s discovery (and after updating their High
14 Pressure Database), SoCalGas/SDGE instead confirmed that the response to ORA’s
15 discovery was based on “the best information available”.⁴⁸ As demonstrated by
16 SoCalGas/SDG&E’s first and second updated responses in April 2017 and May 2017,
17 and its original response to SED Data Request 3, this statement was not correct.⁴⁹

18 The Applicants’ proposal, at the time the Application was filed, to establish Line
19 1600’s MAOP at 320 psig would mean that operating pressure along these weakened
20 segments may reach more than 20% of SMYS,^{50 51} which is not consistent with federal

⁴⁶ SoCalGas/SDG&E Response to ORA DR-87, Question 2c. *See ORA-04, Additional Supporting Attachments to ORA-02.*

⁴⁷ SoCalGas/SDG&E Response to ORA DR-89. *See ORA-04-C, Additional Confidential Supporting Attachments to ORA-02.*

⁴⁸ SoCalGas/SDG&E Amended Response to ORA DR-19, Question 7. *See ORA-04, Additional Supporting Attachments to ORA-02.*

⁴⁹ Updated response to ORA-06, Question 12, amended April 27, 2017, and amended again May 22, 2017. *See ORA-04-C, Additional Confidential Supporting Attachments to ORA-02.*

⁵⁰ *See Ex. ORA-02-C, Confidential Workpapers and Supporting Attachments of M Botros, tab “MAOP D - CONF”.*

⁵¹ ORA is cognizant that Applicants proposed Maximum Operating Pressure on Line 1600 may be 20 psig lower than their proposed MAOP, , but is concerned that Applicants’ proposed MAOP along these weakened segments would violate federal requirements. Applicants have provided conflicting responses

1 safety standards. ORA’s proposal to replace these segments would resolve this problem.
2 With the additional, revised information the Applicants’ provided to ORA after its
3 opening testimony was served, ORA is now concerned that the remainder of the
4 approximately 46 miles of Line 1600 may also be using inaccurate data and that
5 Applicants have not provided the appropriate records to demonstrate the MAOP of each
6 segment of Line 1600, given the updates to their High Pressure Database.

7 As an additional safety enhancement to the proposed derating of Line 1600, ORA
8 recommends that at each point where a line with a MAOP greater than 325 psig connects
9 to Line 1600, the Applicants be required to install overpressure protection equipment
10 consisting of: 1) a pressure regulator; 2) two monitoring valves; and 3) a pressure relief
11 valve.⁵² These measures will ensure that all four devices would have to fail before Line
12 1600 would be over-pressurized by gas coming through such a connection point.⁵³ The
13 part of the proposal to add pressure regulators, two monitoring valves, and a relief valve
14 at each connecting transmission line to Line 1600 that also has a higher pressure than
15 Line 1600 adds several extra measures of protection against these connecting lines
16 inadvertently over-pressuring Line 1600 if they should fail.

17
18 ***Step 2: Require SoCalGas and SDG&E to seek a waiver from the Pipeline Hazardous***
19 ***Materials Safety Administration (PHMSA) to pursue pressure testing with gas on Line***
20 ***1600, at or below the current Maximum Allowable Operating Pressure (MAOP) of 512***
21 ***psig.***

as to what the Maximum Operating Pressure (MOP) of Line 1600 would be if derated. For example, in response to SED Data Request 1, Question 12, that the maximum MOP would be 320 psi; this contradicts the statement in the updated direct testimony of Kohls that the MOP would be 300 psi (Line 1600 Derating Impact Analysis, p. 1).

⁵² In some cases, Applicants may have already proposed some portions of these changes, or the system may be configured in a similar fashion. As part of the proposed plan the Applicants would submit, these areas and configurations should be identified.

⁵³ ORA understands that the pressure regulator is the primary device that restricts the flow of gas into a line to the set MAOP, in this case 325 psig, into Line 1600. A monitoring valve is a device set so that if the pressure regulator fails, the monitoring valve serves as a backup. The relief valve is a final measure, in which if the pressure exceeds a set point, the gas is vented to the atmosphere. These devices are pneumatic and thus not subject to failure if electricity becomes unavailable.

1 Federal requirements, allow a pipeline segment to be pressure tested with gas in
2 Class 2, 3, or 4 locations to a hoop stress up to 30% of SMYS.⁵⁴ ORA proposes to test
3 with gas at a minimum pressure of 30% SMYS (487.5 psig), and that minimum test
4 pressure would be allowed under these federal requirements without a waiver from the
5 Pipeline and Hazardous Materials Administration (PHMSA). However, ORA
6 recommends the Applicants be required to apply for a PHMSA waiver in order to allow
7 for testing with gas at a pressure slightly higher than the 30% SMYS limit.

8 The reason for testing at a slightly higher pressure than 30% SMYS is that certain
9 points on Line 1600 would need to have that slightly higher test pressure so that each
10 point on the line would be assured of reaching a test pressure of at least 30% SMYS;⁵⁵
11 the necessary test pressure to validate ORA's proposed MAOP of 325 psig, or 20%
12 SMYS. During the test, not all of Line 1600 would experience the exact same pressure;
13 certain points along it would experience slightly higher pressures than certain other
14 points, due to factors such as drafting along the line. As the operator of the pipeline,
15 SoCalGas/SDG&E should be ordered to provide testimony and a plan for testing Line
16 1600 with gas. The plan should include:

- 17 • Applicants' opinion and underlying fact-based rationale as to whether it is
18 feasible to test Line 1600 with gas at 487.5 psig throughout the line, or if it
19 test pressures must exceed 487.5 psig in certain locations, then Applicants
20 plan should provide the following;
- 21 • The pressures needed at each location on Line 1600 during the test,
22 including maximum pressures to which Line 1600 would be exposed ;
- 23 • Identification of all factors, including drafting, that would interfere with a
24 test pressure of 487.5 psig;
- 25 • Whether each factor that would interfere with the proposed test pressure
26 can be eliminated, and how;
- 27 • If a factor that would interfere with the proposed test pressure cannot be
28 eliminated, how it can be minimized to ensure test pressures on all parts of
29 Line 1600 are as close to 487.5 psig as possible without going under;

⁵⁴ 49 CFR 192.503(c).

⁵⁵ For example, there could be pressure testing as high as the current MAOP approved by the Commission of 512 psig, which is at 31.5% of SMYS.

- 1 • ORA recommends that the plan be required to not test at a pressure higher
2 than necessary to ensure that all parts of Line 1600 reach a pressure of
3 487.5 psi;
- 4 • Any other information necessary to test Line 1600 with gas at ORA’s
5 proposed pressure.

6
7 Given the reason for seeking a waiver provided above, the following factors
8 justify seeking a waiver to deviate slightly from the requirement limiting the use of gas to
9 test Line 1600 under 49 CFR 192.503. The waiver should be requested based upon the
10 following:

- 11 1) The highest test pressure on the line would be approximately the same
12 as the current MAOP of 512 psig required by Commission Resolution
13 SED-01.
- 14 2) SoCalGas/SDG&E have stated that the maximum safe pressure of the
15 pipeline is 800 psig.⁵⁶ In support of this statement, SoCalGas/SDG&E
16 said that the yield strength of Line 1600 was 2.3 times the 800 psig
17 MAOP.⁵⁷
- 18 3) SoCalGas/SDG&E have stated they historically operated the pipeline at
19 pressures as high as 800 psig, reduced the MAOP to 640 psig in 2011,
20 and reduced it again to 512 psig in 2016, which is the MAOP of Line
21 1600 today.⁵⁸
- 22 4) Pursuant to federal safety requirements, if SoCalGas/SDG&E believed
23 that the MAOP on Line 1600 had to be reduced, they were required to
24 do so.⁵⁹ They did not voluntarily reduce the MAOP below 640 psig
25 when that MAOP was established in 2011, and they have not reduced
26 the MAOP below 512 psig since Resolution SED-01 required the
27 reduction to 512 psig in 2016.
- 28 5) SoCalGas and SDG&E have represented to this Commission that Line
29 1600 is currently fit for service.⁶⁰

⁵⁶ SoCalGas/SDG&E Response to ORA DR-12, Question 13.

⁵⁷ SoCalGas/SDG&E Response to ORA DR-12, Question 27. “[P]rior to both the in-line inspection and the proactive pressure reduction, the lowest calculated safety margin on Line 1600 at 800 psig was 2.3 times the MAOP.”

⁵⁸ SoCalGas/SDG&E Supplemental Testimony, pp. 73, 80 fn 135, and 41 fn 70 respectively.

⁵⁹ 49 CFR Section 192.619(a)(4).

⁶⁰ See, for example, SoCalGas/SDG&E Comments on Draft Resolution SED-1, p. 3.

- 1 6) SoCalGas and SDG&E provide further support for the maximum safe
2 pressure of Line 1600 through two studies performed by Kiefner.⁶¹ The
3 first, performed by Benjamin Wright, stated that “it appears that
4 pressure cycle fatigue is not an integrity threat for Pipeline 1600 based
5 on current operating conditions.”⁶² In an attachment to the
6 Supplemental Testimony, Michael Rosenfeld of Kiefner found that
7 “there is no evidence that Line 1600 is unsafe”, although the testimony
8 caveated this statement by including unknowable factors.⁶³
- 9 7) SoCalGas/SDG&E pointed out that the results of the 2012 to 2015 In-
10 Line Inspection “demonstrate that for the remaining anomalies in Line
11 1600, adequate safety margins exist for operation at its [MAOP] of 640
12 psig...”⁶⁴
- 13 8) SoCalGas/SDG&E’s baseline Transmission Integrity Management Plan
14 assessment, conducted when Line 1600 operated with an 800 psig
15 MAOP, “did not indicate that Line 1600 should be permanently derated,
16 replaced, or tested.”⁶⁵
- 17 9) According to SoCalGas/SDG&E’s witness, external corrosion has not
18 been observed on Line 1600 in the baseline assessment completed in
19 2007.⁶⁶ SoCalGas/SDG&E also has not observed corrosion or
20 identified interacting with manufacturing-related seam flaws or selective
21 seam corrosion.⁶⁷

22

23 Previous operating pressures, well in excess of 487.5 psig, if combined with
24 records of valid leak surveys performed at those pressures, may be able to serve as
25 evidence of a valid pressure test, if PHMSA agrees. If available, such evidence could be
26 included in the waiver request. This approach could satisfy the requirement to pressure
27 test Line 1600, while remaining compliant if the alternative approach based on past

⁶¹ Kiefner is an engineering consulting firm hired by SoCalGas/SDG&E.

⁶² Redacted attachment to SoCalGas/SDG&E Response to ORA DR-36, Question 15, p. 2.

⁶³ SoCalGas/SDG&E Supplemental Testimony, Attachment C – Review of Risk Factors for Line 1600.

⁶⁴ Prepared Testimony of Sera, p. 8.

⁶⁵ SoCalGas/SDG&E Response to ORA-DR 12, Question 5. The baseline assessment was conducted when Line 1600 operated at 800 psig.

⁶⁶ Prepared Testimony of Sera, p. 5.

⁶⁷ SoCalGas/SDG&E Response to ORA DR-12, Question 1a.

1 operations and leak surveys is granted. SoCalGas/SDG&E have stated that they would
2 not be willing to seek a waiver to test Line 1600 with gas.⁶⁸

3

4 ***Step 3: Pursuant to the PHMSA waiver, pressure test Line 1600 with gas at pressures***
5 ***along the line between 487.5 psig (30 percent of SMYS) and the currently mandated 512***
6 ***psig (31.5 percent of SMYS), with 487.5 psig being 1.5 times the proposed reduced***
7 ***MAOP of 325 psig.***

8 If the waiver from PHMSA is granted, then Line 1600 should be pressure tested
9 with gas. During the pressure test, SoCalGas/SDG&E should be required to perform the
10 leak tests required by federal safety requirements.⁶⁹ This test would provide a further
11 margin of safety on Line 1600.⁷⁰ A pressure test also ensures compliance with safety
12 requirements to test or replace transmission lines under Public Utilities (PU) Code § 958
13 if Line 1600 remains a transmission line, and a pressure test provides an extra safety
14 margin if Line 1600 were to be categorized as a distribution line (which ORA does not
15 support).

16 A pressure test to at least 487.5 psig is commensurate with current standards for
17 pressure testing to 1.5 times the MAOP of the pipeline.⁷¹ This pressure exceeds the
18 standards for pipe installed prior to November 12, 1970, and meets the standards for pipe
19 installed after November 11, 1970.⁷² The test (if the waiver is granted) would be
20 compliant with all applicable federal and state regulations. The test should be held for
21 either a minimum of 1 hour, in compliance with 49 Code of Federal Regulations (CFR)
22 192.507(c), or the time to complete the leak test required under 49 CFR 192.507(b),
23 whichever is longer.

⁶⁸ SoCalGas/SDG&E Response to ORA DR-79, Question 10.

⁶⁹ 49 CFR 192.507

⁷⁰ SoCalGas/SDG&E Supplemental Testimony, Attachment C to Supplemental Testimony, p. 30. Figure 14 shows that operating Line 1600 at 320 psig has significantly reduced risks as compared to baseline operations. ORA's proposed additional mitigation measures should further reduce this risk.

⁷¹ 49 CFR 192.619(a)(2)(ii).

⁷² 49 CFR 192.619(a)(2)(ii).

1 Although Line 1600 has not been pressure tested,⁷³ SoCalGas/SDG&E have
2 indicated that past operating pressures are commensurate with a test of at least 1.25 times
3 MAOP,⁷⁴ a lower multiple of MAOP than the federal regulations shown in the paragraph
4 above. This means that SoCalGas/SDG&E have recommended a test with a less stringent
5 safety margin than these federal requirements, which require a test to 1.5 times the
6 MAOP in Class 3 and 4 locations. ⁷⁵ ⁷⁶ Approximately 60 percent of Line 1600 runs
7 through Class 3 locations, and no Class 4 locations have been identified by
8 SoCalGas/SDG&E.⁷⁷ Nonetheless, ORA’s proposed pressure test of Line 1600 would be
9 high enough above ORA’s proposed MAOP to exceed SoCalGas/SDG&E’s
10 recommended pressure test multiple of 1.25 times MAOP. This should satisfy
11 SoCalGas/SDG&E’s concerns with line rupture. Based on engineering judgement, but
12 not an engineering remaining life assessment, SoCalGas/SDG&E determined that Line
13 1600 has at least 20 years of remaining life, which would indicate a date of

⁷³ Applicants originally stated that Line 1600 could not be pressure tested without first having a replacement line built, which was included in Attachment 1 to Decision 14-06-007. In response to ORA’s October 31, 2015 protest, SoCalGas/SDG&E admitted in its November 12, 2015 Reply (pp. 8-9), for the first time that Line 1600 could be pressure tested.

⁷⁴ SoCalGas/SDG&E Response to ORA DR-12, Question 23, which states, “Based upon PHMSA guidance and the technical research that its based upon, assuming Line 1600 passes a pressure test of at least 1.25 times the MAOP, rupture is generally not considered a threat at pressures equal to or less than MAOP, and there is an absence of conditions that could affect the stability of residual manufacturing and construction defects on the line. Factors such as excavation damage and corrosion could affect the future stability of flaws that passed the pressure test.”

⁷⁵ 49 CFR 192.619(a)(2)(ii).

⁷⁶ A class location is an indication of the density of buildings and population within a certain distance of a given pipeline.

As defined in 49 CFR 192.5:

A class location unit “is an onshore area that extends 220 yards (200 meters) on either side of the centerline of any contiguous 1-mile (1.6 kilometer) length of pipeline.”

Class 3 locations have “46 or more locations intended for human occupancy” within 220 yards of either side of the pipeline, or within 100 yards of a “building or a small well-defined outside area [e.g. playground, theater], that is occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12-month period.”

Class 4 is “any class location unit where buildings with four or more stories above ground are prevalent. A class 4 location ends 220 yards (200 meters) from the nearest building with four or more stories above ground.”

⁷⁷ SoCalGas/SDG&E Response to ORA DR-73, Question 2.

1 approximately 2035 for reassessment.⁷⁸ According to SoCalGas/SDG&E, a 20 year
2 reassessment interval with a pressure test, in-line inspection, or direct assessment is
3 consistent with the certain federally established guidelines.⁷⁹

4 The objections SoCalGas/SDG&E have raised regarding a test with gas do not
5 acknowledge the current MAOP or pressures at which Line 1600 currently operates.⁸⁰

6
7 ***Step 4: Reduce the MAOP of Line 1600 to 325 psig, consistent with 20% of the Specified***
8 ***Minimum Yield Strength.***

9 Unlike SoCalGas/SDG&E’s proposed MAOP reduction on Line 1600 to 320 psig,
10 ORA’s proposal to reduce the MAOP on line 1600 ties ORA’s proposed MAOP to what
11 can be validated in compliance with the most stringent federal safety requirements by
12 ORA’s proposed pressure test in Step 3.

13 As stated in Step 3, this proposed MAOP would be calculated based upon the
14 proposed test pressure of 487.5 psig, which would be 1.5 times the MAOP (i.e., 325
15 psig), in compliance with standards for pipe installed after November 11, 1970. ORA is
16 proposing a more stringent safety factor than a test that is only 1.4 times the MAOP,
17 which applies to pipelines installed before November 12, 1970, such as Line 1600.

18 If Line 1600 operates at 20% SMYS or above, it is a transmission line under
19 federal regulations.⁸¹ Given the identified flaws on Line 1600, the Commission should
20 require the MAOP of Line 1600 be set at a level that ensures Line 1600 remains a
21 transmission line. A benefit of Line 1600 remaining a transmission line is that
22 transmission lines must be managed under more stringent integrity management
23 requirements than distribution lines. Transmission lines are managed under 49 CFR 192

⁷⁸ SoCalGas/SDG&E Response to ORA DR-36, Question 15.

⁷⁹ SoCalGas/SDG&E Response to ORA DR-36, Question 15, referencing 49 CFR 192.939. However, 49 CFR 192.939 also requires a confirmatory direct assessment (from 49 CFR 192.931) or low stress reassessment (from 49 CFR 192.941) every 7 years.

⁸⁰ SoCalGas/SDG&E Response to ORA DR-79, Question 4.

⁸¹ 49 CFR Section 192.3, Transmission Line definition 2 states a line is a transmission line if it “operates at a hoop stress of 20 percent or more of SMYS”.

1 Subpart O (Gas Transmission Pipeline Integrity Management [TIMP]). Distribution lines
2 typically are required to only be managed under the Gas Distribution Pipeline Integrity
3 Management [DIMP].⁸² TIMP is more prescriptive than the DIMP. SoCalGas/SDG&E
4 have responded that Line 1600, if derated as proposed by Applicants, would be managed
5 under the DIMP program.⁸³ However, even if derated and made a distribution line, given
6 the identified flaws on Line 1600, ORA recommends treating Line 1600 as a transmission
7 line for integrity management purposes. Leaving Line 1600 as a transmission line would
8 provide assurance that SoCalGas/SDG&E would manage it under TIMP rather than
9 DIMP.

10 In response to ORA’s discovery about Applicants’ operational concerns,
11 Applicants focused entirely on the design criteria, but not concerns regarding establishing
12 a MAOP of 325 psig.⁸⁴

13 Regarding Line 1600, Applicants have proposed to “reduce the pressure in the
14 pipeline to an operating pressure of 300 psig with an MAOP of 320 psig between
15 Rainbow pressure limiting station and Kearny Villa pressure limiting station.”⁸⁵ ORA
16 does not oppose Applicants’ proposal to reduce the operating pressure on the line, but
17 proposes setting the MAOP at 325 psig for the reasons described in this testimony.

18 **IV. LINE 1600, IF DERATED TO 320 PSIG, AS PROPOSED BY**
19 **APPLICANTS, IS REQUIRED TO REMAIN A TRANSMISSION**
20 **LINE.**

21 As discussed in this section, Applicants’ proposal to derate Line 1600, and call it a
22 distribution line has several problems, which are summarized below, and described in
23 more detail in this section:

- 24 • Even at 320 psig, federal safety requirements define Line 1600 as a
25 transmission line;

⁸² SoCalGas/SDG&E Response to ORA DR-12, Questions 2 and 9. See also 49 CFR 192 Subpart P.

⁸³ SoCalGas/SDG&E Response to ORA DR-24, Question 1.

⁸⁴ SoCalGas/SDG&E Response to ORA DR-79, Question 9.

⁸⁵ Updated Testimony of Kohls, in Attachment XI: Line 1600 De-rating Impact Analysis, p. 1.

- 1 • Even if Line 1600 could be called a high-pressure distribution line,
2 Applicants have not followed the federal safety requirements to establish
3 MAOP for high pressure distribution lines; and
- 4 • Because Applicants’ proposal leaves Line 1600 as a transmission line,
5 Applicants’ proposal would not follow certain of California’s requirements
6 for natural gas transmission lines.

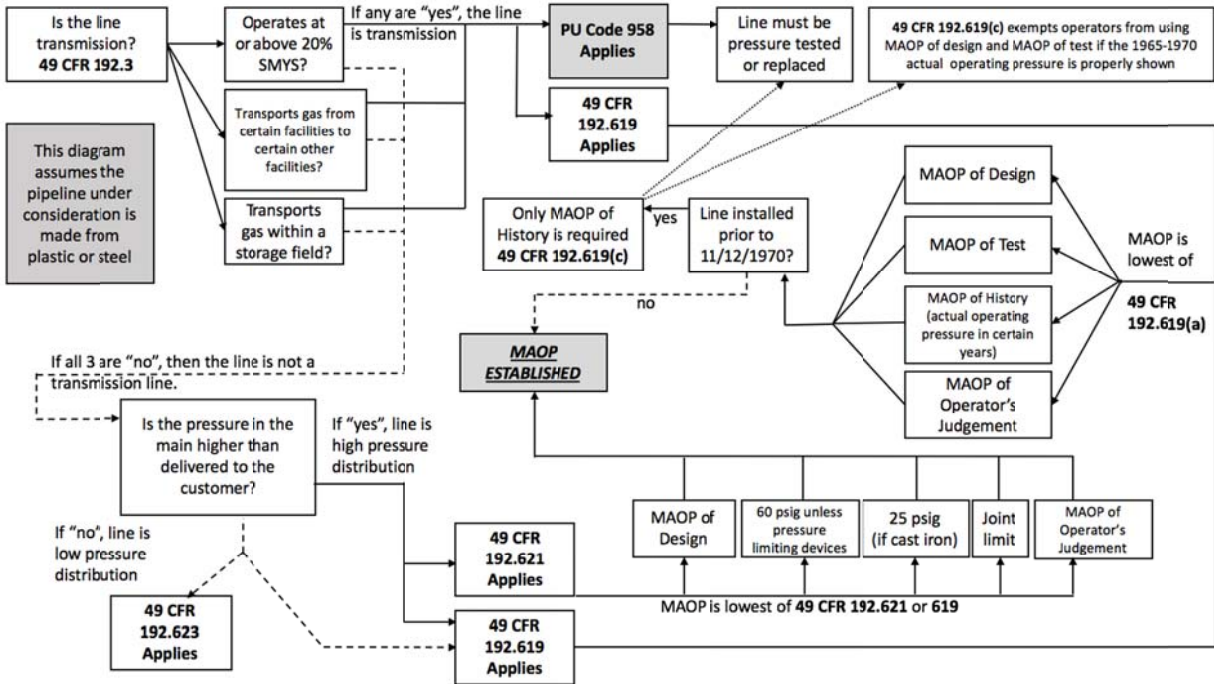
7
8 ORA understands that all alternatives identified by SoCalGas/SDG&E, except for
9 the hydrotest alternative, include Applicants’ proposal to derate Line 1600 to 320 psig,
10 which Applicants incorrectly assert would make Line 1600 a distribution line,⁸⁶ but not
11 test or replace Line 1600. For this reason, each alternative to install pipe except for the
12 pressure test alternative, would suffer the same flaws as the proposed project.

13 **Figure 1: Diagram to Establish MAOP for a Plastic or Steel Pipeline^{87, 88}**

⁸⁶ See Supplemental Testimony of SDG&E and SoCalGas, p. 94, lines 11-16, including footnote 164. Applicants’ footnote 164 states, “49 CFR § 192.3 (“*Transmission line* means a pipeline, other than a gathering line, that: . . . (2) operates at a hoop stress of 20 percent or more of SMYS.”) (Emphasis in Applicants’ testimony, but not in the CFR.) This is an incomplete quote of the entire definition of transmission line under 49 CFR § 192.3 and omits definitions of transmission line provided there. For a complete quote of all three separate definitions of transmission line under 49 CFR § 192.3, see Section VI.1 of this testimony, immediately below.

⁸⁷ Figure 1 is an illustrative diagram created by ORA to show how MAOP is established under 49 CFR 192, subparts A and L, PU Code Section 958, and the relationships among those provisions. This diagram does not reference 49 CFR Section 192.620, the alternative mechanism to 49 CFR Section 192.619 for establishing MAOP.

⁸⁸ A full-page copy of this image is attached at the end of this testimony in Appendix A.



1

2 **A. Even at 320 psig, Federal Safety Requirements Define**
 3 **Line 1600 as a Transmission Line**

4 **1. Federal Definition of a Transmission Line**

5 49 CFR §192.3 provides the definition of a transmission line:

6 *“Transmission line means a pipeline, other than a gathering line, that:*

- 7 (1) Transports gas from a gathering line or storage facility to a distribution center,
 8 storage facility, or large volume customer that is not down-stream from a
 9 distribution center; (2) operates at a hoop stress of 20 percent or more of SMYS;
 10 or (3) transports gas within a storage field.”

11 Because of the use of the term “or” before the third definition, a line is a
 12 transmission line under this safety requirements if it meets any one of the three
 13 definitions under this requirement. A claim that a pipeline will operate at less than 20%
 14 SMYS is not sufficient to say it is no longer a transmission line.

15 **B. ORA’s Analysis Shows that Line 1600 Remains a**
 16 **Transmission Line Under the Federal Safety**
 17 **Requirements**

18 In the December 22, 2016 Revised Scoping Ruling, the Commission added to the

1 scope of the proceeding Supplemental Question A, recommended by ORA and the Joint
2 Intervenors,⁸⁹ “if de-rated to 320 psig or less, is Line 1600 a transmission line or a
3 distribution line as defined by federal safety requirements?”⁹⁰

4 If derated to 320 psig as proposed by Applicants, Line 1600 remains a
5 transmission line under the second definition of 49 CFR Section 192.3 (operates at a
6 hoop stress of 20% or more) because SoCalGas and SDG&E’s proposal at the time of
7 filing the application to operate Line 1600 at 320 psig or less, results in operating Line
8 1600 at or above 20% of the SMYS along part of the line. Specifically, the design
9 pressure of Line 1600’s weakest pipeline segments would operate at approximately 24%
10 SMYS;⁹¹ and the next weakest segments would operate at approximately 22% SMYS.⁹²

11 Certain SoCalGas/SDG&E records, which are needed to complete the required
12 design pressure equation,⁹³ demonstrate that various segments of the pipeline have
13 thinner walls or lower yield strength than most of the rest of the pipeline.⁹⁴ As ORA
14 understands the November 4, 2016 Scoping Ruling, the Commission was unaware of the
15 additional designed-based documentation from SoCalGas/SDG&E that demonstrate the

⁸⁹ On December 6, 2016, ORA, Protect Our Communities Foundation (POC), Sierra Club (SC), Southern California Generation Coalition (SCGC), and The Utility Reform Network (TURN) submitted a motion to postpone Phase 1 briefs and amend the Scoping Memo to focus on Line 1600 Safety, amongst other issues. On December 9, 2016, the Utility Consumers’ Action Network (UCAN) filed in support of the motion, while SoCalGas/SDG&E opposed the motion.

⁹⁰ December 22, 2016 Revised Scoping Ruling, p. 8.

⁹¹ SoCalGas/SDG&E Response to ORA DR-06, Question 12. “Attached are the records required to complete the design pressure equation.” The attachment has been identified as confidential by SoCalGas/SDG&E, and is included in Ex. ORA-02-C, Confidential Workpapers and Supporting Attachments of M Botros.

⁹² SoCalGas/SDG&E Response to ORA DR-06, Question 12. “Attached are the records required to complete the design pressure equation.” The attachment has been identified as confidential by SoCalGas/SDG&E, and is included in Ex. ORA-02-C, Confidential Workpapers and Supporting Attachments of M Botros.

⁹³ The design pressure formula is shown under 49 CFR Section 192.105, and is cross-referenced by 49 CFR Sections 192.619(a)(1) and 621(a)(1).

⁹⁴ SoCalGas/SDG&E Response to ORA DR-06, Question 12. “Attached are the records required to complete the design pressure equation.” The attachment has been identified as confidential by SoCalGas/SDG&E, and is included in Ex. ORA-02-C, Confidential Workpapers and Supporting Attachments of M Botros.

1 MAOP of design would exceed 20% SMYS if Line 1600 was derated to 320 psig without
2 ORA's recommended changes, based on SoCalGas/SDG&E's High Pressure Database at
3 the time the Application was filed.^{95 96}

4 By ORA's calculations, the approximate distance of the segments exceeding 20%
5 SMYS with an MAOP of 320 psig is approximately 0.5 miles.⁹⁷ ORA does not dispute
6 that the majority of Line 1600 would operate below 20% SMYS if derated to 320 psig.⁹⁸
7 To ORA's knowledge, most of Line 1600 has a yield strength of over 1600 psig based on
8 Barlow's Formula,⁹⁹ consistent with SoCalGas/SDG&E's statements.¹⁰⁰

9 After ORA submitted testimony, SoCalGas/SDG&E updated the data responses
10 ORA relied upon to identify the weakest segments. According to these post-testimony
11 updates, these weakest segments appear to be stronger than what SoCalGas/SDG&E
12 initially represented to ORA. If the updated information provided by the Applicant is
13 correct, ORA's assessment would be that the weakest segments may not need to be
14 replaced. However, ORA's analysis demonstrates that SoCalGas/SDG&E filed an
15 Application that proposed a project that would not comply with Public Utilities Code
16 Section 958.

17 Even if the Applicants had proposed to reduce the MAOP of Line 1600 such that it
18 could operate Line 1600 at below 20% of SMYS, ORA still believes that Line 1600
19 would be a transmission line under the first transmission definition of 49 CFR Section

⁹⁵ November 4, 2016 Scoping Ruling, p. 17, FN 27.

⁹⁶ SoCalGas/SDG&E Response to ORA DR-89. *See ORA-04-C, Additional Confidential Supporting Attachments to ORA-02.*

⁹⁷ *See, Ex. ORA-02-C, Confidential Workpapers and Supporting Attachments of M Botros, tab "Low Design Feet – CONF".*

⁹⁸ *See, for example, Supplemental Testimony pp. 22, 76, 94, 97, 98, 100, Attachment C to Supplemental Testimony, p. 3. See also Ex. ORA-02-C, Confidential Workpapers and Supporting Attachments of M Botros, tabs "Percent SMYS - CONF", "MAOP D - CONF", and "Low Design Feet - CONF".*

⁹⁹ Barlow's formula is $P = (2St)/D$. P = pressure; S = Allowable Stress; t = Wall Thickness; D = Outside Diameter. Barlow's Formula is captured in 49 CFR 192.105 (Design Formula for Steel Pipe), with the addition of multipliers for F (Design Factor based on Class Location), E (Longitudinal Joint Factor); and T (Temperature Derating).

¹⁰⁰ Amendment to the Application, pp. 10-11. The class location factor of 0.5 indicates that a MAOP of 800 supports a yield strength of 1600.

1 192.3. (“Transports gas from a gathering line or storage facility to a distribution center,
2 storage facility, or large volume customer that is not down-stream from a distribution
3 center”) ¹⁰¹ At its northern end, Line 1600 starts at Rainbow Station, which is fed from
4 three SoCalGas transmission lines extending south from Moreno Compressor Station.¹⁰²
5 Line 1600 then runs its course, and connects with multiple distribution centers¹⁰³
6 including the Mission City Gate¹⁰⁴ at the southern end of Line 1600.¹⁰⁵ In this way, Line
7 1600 has similar features to a New Mexico pipeline that PHMSA found to be a
8 transmission pipeline under the first definition of 49 CFR Section 192.3.¹⁰⁶ The New
9 Mexico pipeline was to operate at less than 20% SMYS, so the second definition under
10 49 CFR Section 192.3 did not apply.¹⁰⁷ Nonetheless, PHMSA determined the New
11 Mexico line to be a transmission line under the first definition of 49 CFR Section 192.3;
12 not a distribution line.¹⁰⁸

¹⁰¹ To confirm the accuracy of ORA’s application of definition 1 to the facts regarding Line 1600, ORA intends to seek an interpretation from PHMSA as to whether Line 1600 is a transmission line based on the characteristics under definition 1. At this time, ORA has not shared certain essential mapping information with PHMSA to inform such a determination, because SoCalGas/SDG&E has marked maps that would provide the requisite information as confidential. However, in the interest of safety and transparency, ORA recommends the Commission, Applicants and other parties join ORA in seeking PHMSA’s interpretation. If any party opposes ORA’s request to seek PHMSA’s interpretation about whether Line 1600 is a transmission line under 49 CFR Section 192.3, ORA would request they identify that position, and the basis for it, in rebuttal testimony.

¹⁰² PEA, Chapter 3, p. 3-6.

¹⁰³ SoCalGas/SDG&E Response to SCGC DR-05, Question 5.7, Redacted.

¹⁰⁴ Atkins, p. 4.17-15.

¹⁰⁵ A city gate is “A location at which gas may change ownership from one party to another (e.g., from a transmission company to a local distribution company), neither of which is the ultimate consumer. May also be referred to as a gate station or town border station.” *See*, 49 CFR Parts 192 and 195 & Inspector Web-based Training Terms at <https://www.phmsa.dot.gov/staticfiles/PHMSA/Pipeline/TQGlossary/Glossary.html>

¹⁰⁶ For example, large volume downstream customers from Rainbow Station, transmission lines served solely off Line 1600, and city gates at the southern end of Line 1600. *See*, PHMSA PI 09-0019, pp. 2-3.

¹⁰⁷ PHMSA PI 09-0019.

¹⁰⁸ PHMSA PI 09-0019.

1 **C. Federal Requirements When Establishing the Maximum**
2 **Allowable Operating Pressure for High-Pressure**
3 **Distribution Systems**

4 49 CFR Section 192.619 generally governs the MAOP for steel and plastic
5 pipelines.¹⁰⁹ Line 1600 is constructed of steel.¹¹⁰ When establishing the MAOP for high-
6 pressure distribution systems, the additional limitations of 49 CFR Section 192.621
7 apply.¹¹¹ According to 49 CFR Section 192.621, the MAOP of a high-pressure
8 distribution system is based on the lowest of:

- 9 (1) The design pressure of the weakest element in the segment, determined
10 in accordance with subparts C and D of this part.¹¹²

¹⁰⁹ 49 CFR Section 192.620 is an alternative method to determine the MAOP of pipelines. Section 620 is generally more prescriptive and ORA has not generally seen Section 620 used in place of Section 619 by California pipeline operators.

¹¹⁰ Supplemental Testimony, p. 146, emphases added:

“The Line 1600 De-rating Impact Analysis [fn omitted] contains the physical changes that would be required to repurpose Line 1600 as a distribution line and integrate its operations into the surrounding distribution systems. The line would also be integrated into normal operations, inspections and maintenance activities associated with *high pressure steel distribution mains* as required by GO 112-F, including those associated with patrolling, leak survey, cathodic protection, valve maintenance, pressure regulator station maintenance as well as damage prevention related locate and mark services.”

¹¹¹ Beyond the plain text of 49 CFR Section 192.621, the Pipeline Hazardous Materials Safety Administration (PHMSA) Interpretation PI-77-006 confirms the plain text reading (emphasis added):

“Section 192.619(a) prescribes the maximum allowable operating pressure for all steel and plastic pipelines. Section 192.621(a) **prescribes additional limitations which apply to high pressure distribution systems**. In order to establish a maximum allowable operating pressure for a high-pressure distribution pipeline, you must comply with the requirements of **both sections**.”

This 1977 interpretation is consistent with PI 75-038:

“2. 192.619(c), under certain conditions, allows an operator to disregard the other provisions of 192.619 in determining a maximum allowable operating pressure in steel and plastic pipelines. 192.619(a)(1) and (a)(6) contain provisions identical to those in 192.621(a)(1) and (a)(5) respectively. Is it correct that while 192.619(c) allows these two provisions in 192.619 to be disregarded, that they cannot be disregarded in 192.621, thereby in effect causing 192.621 to preclude 192.619(c) where these two provisions are concerned?”

“2. Yes, Section 192.619(c) applies subject to the requirements of Section 192.621.”

See Ex. ORA-02-SA, Supporting Attachments of N Skinner for the complete interpretation letters.

¹¹² Subpart C is “Pipe Design” and covers 49 CFR Section 192.101 to 125. Subpart D is “Design of Pipeline Components” and covers 49 CFR Section 192.141 to 203.

- 1 (2) 60 psig (414 kPa) gage, for a segment of a distribution system otherwise
2 designed to operate at over 60 psig (414 kPa) gage, unless the service
3 lines in the segment are equipped with service regulators or other
4 pressure limiting devices in series that meet the requirements of Section
5 192.197(c).
- 6 (3) 25 psig (172 kPa) gage in segments of cast iron pipe in which there are
7 unreinforced bell and spigot joints.
- 8 (4) The pressure limits to which a joint could be subjected without the
9 possibility of its parting.
- 10 (5) The pressure determined to be the maximum safe pressure after
11 considering the history of segment, particularly known corrosion and
12 the actual operating pressures.

13 In addition to the requirements under 49 CFR Section 192.621, under 49 CFR
14 Section 192.619(a), there are four different requirements to calculate the MAOP of a steel
15 pipeline, and the operator is required to use the lowest of these four calculated values in
16 order to establish the MAOP of the high-pressure distribution line. The four MAOP
17 values required under 49 CFR Section 192.619(a) are:¹¹³

- 18 (1) The design pressure of the weakest element in the segment, determined
19 in accordance with subparts C and D of this part.
- 20 (2) The pressure obtained by dividing the pressure to which the segments
21 was tested after construction.
- 22 a. For steel pipe operated at 100 psig (689 kPa) gage or more, the test
23 pressure is divided by a factor determined in accordance with the
24 installation date and class location.
- 25 b. For steel pipe installed before November 12, 1970:
- 26 i. Class 1: 1.1
- 27 ii. Class 2: 1.25
- 28 iii. Class 3: 1.4 (installed before 11/12/1970); 1.5 (installed after
29 11/11/1970)
- 30 iv. Class 4: 1.4 (installed before 11/12/1970); 1.5 (installed after
31 11/11/1970)
- 32 (3) The highest actual operating pressure to which the segment was
33 subjected to during the 5 years preceding July 1, 1970. This pressure

¹¹³ The listing is truncated from the full description of 49 CFR Section 192.619.

1 restriction applies unless the segment was tested according to the
2 requirements in paragraph (a)(2) of this section, after July 1, 1965, or
3 the segment was updated according to the requirements in subpart K of
4 this part.

- 5 (4) The pressure determined by the operator to be the maximum safe
6 pressure after considering the history of the segment, particularly known
7 corrosion and the actual operating pressure.

8
9 49 CFR Section 192.619(c), sometimes called the “grandfather clause”, exempts
10 operators from following the other requirements of 49 CFR Section 619:

11 “The requirements on pressure restrictions in this section do not apply in
12 the following instance. An operator may operate a segment of pipeline
13 found to be in satisfactory condition, considering its operating and
14 maintenance history, at the highest actual operating pressure to which the
15 segment was subjected during the 5 years preceding the applicable date in
16 the second column of the table in paragraph (a)(3) of this section. An
17 operator must still comply with [Section] 192.611.”¹¹⁴

18
19 The grandfather clause only applies if several conditions are met. First, operators
20 must have valid records demonstrating the maximum historical operating pressure
21 between 1965 and 1970.¹¹⁵ Second, in the case of high pressure distribution lines, the
22 grandfather clause does not excuse an operator from calculating design-based MAOP and
23 operating at the design-based MAOP if it is the lowest value. Rather, PHMSA has
24 confirmed that a high-pressure distribution line must have its MAOP set by the lowest
25 value of the grandfathered pressure (if there is one), the design pressure, or any other
26 elements set in 49 CFR Section 192.621. Multiple PHMSA interpretations have
27 confirmed that, pursuant to 49 CFR Section 192.621, high pressure distribution lines
28 must have their MAOP set at the lowest of several values, including the design
29 pressure.¹¹⁶

¹¹⁴ 49 CFR Section 192.619(c).

¹¹⁵ PHMSA PI 14-0005, p. 3.

¹¹⁶ PI 75-0038, PI 77-006, PI 93-002, and PI 14-0005.

1 **D. Line 1600 Cannot Be a High-Pressure Distribution Line**
2 **Under the Federal Safety Requirements**

3 In SoCalGas/SDG&E’s Supplemental Testimony, Line 1600 is referred to
4 specifically as a high-pressure distribution line if derated.¹¹⁷ If Line 1600 were to
5 become a high-pressure distribution line, Line 1600 would be subject to 49 CFR Sections
6 192.619 or 192.620, and also Section 192.621. However, SoCalGas/SDG&E has made
7 no reference to meeting the requirements of 49 CFR 192.621 in its Application,
8 Testimony, or Supplemental Testimony.¹¹⁸ SoCalGas/SDG&E did not include 49 CFR
9 Section 192.621 as an applicable code section in response to discovery from ORA, only
10 49 CFR Sections 192.619 and 192.620, when asked:¹¹⁹

11 Provide the specific values needed to determine the Maximum Allowable
12 Operating Pressure of Line 1600 if it is derated to a distribution line,
13 including reference to the applicable code sections of 49 Code of Federal
14 Regulations § 192. ORA understands that if Line 1600 were to be derated,
15 the new Maximum Allowable Operating Pressure would be established
16 under 49 Code of Federal Regulations § 192.619, 620, or 621.

17
18 Even though they were prompted to do so in the question, SoCalGas/SDG&E did
19 not provide applicable code sections of 49 CFR 192 needed to determine the MAOP of
20 Line 1600, but merely responded:¹²⁰

¹¹⁷ Supplemental Testimony, p. 146.

¹¹⁸ ORA searched for the terms “619”, “620”, and “621” (in the context of 49 CFR 192) in the Amendment to the Application, the PEA, the CEA, the Prepared Testimony, the Updated Testimony, and the Supplemental Testimony.

“619” is identified approximately 7 times in SoCalGas/SDG&E’s showing. It is identified in the Amendment to the Application (p. A-10), the Testimony of Haines and the Updated Testimony of Haines (pp. 12 & 13), the Testimony of Navin and the Updated Testimony of Kohls (p. 4 of the Line 1600 Hydrotest Study and Cost Estimate), the Testimony of Schneider (p. 4, FN 9 & p. 6); and the Supplemental Testimony (p. 103).

No matches were found for “620”.

No matches were found for “621”.

¹¹⁹ SoCalGas/SDG&E Response to ORA DR-06, Question 14.

¹²⁰ SoCalGas/SDG&E have subsequently updated their response to ORA Data Request 6, Question 14 on May 23, 2017, replacing 49 CFR 192.620 with 621. See ORA-04, Additional Supporting Attachments to ORA-02.

1 “Please refer to Response 12 to this data request, which provides the
2 specific values needed to determine the MAOP for Line 1600 if it is derated
3 to a distribution line at 320 psig.

4 Per 49 CFR § 192.3 Definitions: Distribution Line – a pipeline other than a
5 gathering or transmission line.

6 If Line 1600 were to be derated, the new MAOP would be established
7 under 49 CFR §§ 192.619 and 192.620.”

8
9 However, if Line 1600 is derated to a high-pressure distribution line, as
10 SoCalGas/SDG&E propose, 49 CFR Section 192.621(a)(1) requires finding the design
11 pressure of Line 1600’s weakest segments in order to determine if those are the lowest
12 value to establish MAOP. At SoCalGas/SDG&E’s proposed MAOP of 320 psig, based
13 on the assumptions used in the High Pressure Database at the time the Application was
14 filed, where SoCalGas/SDG&E had been unable to identify records substantiating the
15 MAOP of the weakest segments identified by ORA in Line 1600, the weakest segments
16 on Line 1600 would have design pressure of approximately 24% SMYS, and the next
17 weakest segments on Line 1600 would have design pressure of approximately 22%
18 SMYS.^{121, 122} According to the second definition of transmission line under 49 CFR
19 Section 192.3, these weakest segments of Line 1600 are above the minimum hoop stress
20 of 20% SMYS, which means Line 1600 is required to be defined as a transmission line.
21 In short, once SCG/SDG&E attempt to call Line 1600 a high-pressure distribution line at
22 320 psig, 49 CFR Section 192.621 applies to Line 1600, which triggers the requirement
23 under 49 CFR Section 192.3 that Line 1600 must be a transmission line. In the case of

¹²¹ SoCalGas/SDG&E Response to ORA DR-06, Question 12. “Attached are the records required to complete the design pressure equation.” The attachment has been identified as confidential by SoCalGas/SDG&E, and is included in Ex. ORA-02-C, Confidential Workpapers and Supporting Attachments of M Botros.

¹²² As stated above, the pressure established under the grandfather clause only applies to set MAOP of high pressure distribution lines if it is lower than the design pressure and any other required indicator of pressure under 49 CFR Section 192.621. In the case of Line 1600, Applicants stated: “The historic MAOP of Line 1600 was 800 pounds per square inch gage....” (See Amendment to the Application, pp. 10-11.)

Assuming for the sake of discussion that Applicants could show this as the grandfathered pressure, it would be higher than the design pressures so that pressure of 800 psig is not applicable here.

1 Line 1600, the design pressure associated with a SMYS below 20% would be 261
2 psig.^{123, 124}

3 Line 1600 must be operated with an MAOP at or below 261 psig, rather than at
4 Applicants' proposed MAOP of 320 psig, in order to be defined as a transmission line
5 under the second definition of 49 CFR Section 192.3. Consistent with 49 CFR Section
6 192.621, the design pressure of the weakest element establishes the MAOP of the line,
7 not the grandfathered pressure based on historical operating pressure, because the design
8 pressure is lower than the grandfathered pressure.¹²⁵ As the SoCalGas/SDG&E proposal
9 also excludes pressure testing, the MAOP established under 49 CFR Section 192.619
10 would need to continue to be established under the grandfather clause, or 49 CFR Section
11 192.619(c) without the confirmation of a pressure test to support the MAOP as required
12 under PU Code § 958.

13 After ORA submitted its testimony, SoCalGas/SDG&E updated its data
14 responses targeting these weakest segments, providing documentation suggesting that
15 these segments were stronger than their initial data responses showed. It turns out
16 these post-testimony updates showed stronger attributes about these segments than the
17 information SoCalGas/SDG&E had at the time they filed their Application. If this
18 updated information is true, then ORA's assessment would be that the weakest
19 segments may not need to be replaced. However, ORA's analysis demonstrates that
20 SoCalGas/SDG&E filed an Application that would not comply with Public Utilities
21 Code 958.

¹²³ The highest pressure to which Line 1600 has historically been subjected was 812 psig, as provided in a 1968 report to the Commission.

However, SoCalGas/SDG&E did not retain pressure logs to support this historical operating pressure.

See SoCalGas/SDG&E Response to ORA DR-14, Question 2 and attachment.

¹²⁴ SoCalGas/SDG&E have experienced overpressurization events. In response to ORA DR-38, Question 1, SoCalGas/SDG&E identified two overpressurization events after Line 1600 had been derated to 640 psig. SoCalGas/SDG&E have not retained and provided records for events prior to 2008.

¹²⁵ 49 CFR Section 192.621 does not contain any exemption for pipelines installed prior to 1970, unlike 49 CFR Section 192.619.

1 ORA’s proposal does not have this problem. ORA's proposal includes replacing
2 these weakest segments, pressure testing, and the use of records of design.¹²⁶ As such,
3 the MAOP of Line 1600 can be established under 49 CFR Section 192.619(a), the non-
4 grandfathered standards for MAOP.

5 **E. Because Applicants’ Proposal Leaves Line 1600 As a**
6 **Transmission Line, Applicants’ Proposal Would Not**
7 **Follow Certain of California’s Requirements of Natural**
8 **Gas Transmission Lines**

9 California has established more stringent safety standards than federal standards,
10 including the requirement to pressure test or replace natural gas transmission lines. As
11 explained in this Section, SoCalGas/SDG&E’s proposal at the time of filing to derate
12 Line 1600 did not follow California’s requirement to pressure test or replace the line.¹²⁷

13 Subsection 5.A. provides applicable California requirements to test or replace
14 natural gas transmission lines. Subsection 5.B. explains that SoCalGas/SDG&E’s
15 proposal to derate Line 1600 would not follow California’s requirement to either test or
16 replace it.

17 **F. California Requirements of Transmission Lines,**
18 **Including the Requirement to Test or Replace**

19 California requires all natural gas transmission lines to be pressure tested or
20 replaced. PU Code § 958(a) requires each gas corporation in California to provide a
21 “comprehensive pressure testing implementation plan for all intrastate
22 transmission lines to either pressure test or replace all segments of intrastate
23 transmission lines that were not pressure tested or that lack sufficient
24 details related to performance of pressure testing.”

25
26 PU Code § 958(c) also provides:

¹²⁶ If the updated records provided are true, replacing of the weakest segments may no longer be required to operate Line 1600 below 20% SMYS at 320 psig. This does not relieve ORA’s concern that due to other factors under 49 CFR Section 192.3, Line 1600 remains a transmission line.

¹²⁷ Although not specifically provided in the Public Utilities Code, the Commission has allowed operators to derate pipelines to distribution service or abandon the lines, as alternative means of compliance. As demonstrated in this exhibit, the SoCalGas/SDG&E proposal does not sufficiently derate Line 1600 to meet these alternative compliance mechanisms.

1 “At the completion of the implementation period, all California natural gas
2 intrastate transmission line segments shall meet all of the following:

3 (1) Have been pressure tested.

4 (2) Have traceable, verifiable, and complete records readily available.

5 (3) Where warranted, be capable of accommodating in-line inspection
6 devices.”

7 **G. SoCalGas and SDG&E’s Proposal to Derate Line 1600**
8 **Would Not Follow California’s Requirement to Test or**
9 **Replace It**

10 SoCalGas/SDG&E’s proposed derating of Line 1600 to 320 psig leaves it a
11 transmission line, as discussed in Section IV above. Since SoCalGas/SDG&E propose to
12 derate Line 1600, but do not propose to pressure test Line 1600,¹²⁸ the Application would
13 not follow California PU Code § 958.^{129, 130}

14 Of the three criteria in PU Code § 958, only the third, accommodation of in-line
15 inspection devices,¹³¹ might be met by SoCalGas/SDG&E’s proposal. ORA is
16 concerned that SoCalGas/SDG&E has not complied with California’s traceable,
17 verifiable, and complete records requirement,¹³² given the lack of record-keeping around

¹²⁸ In the SoCalGas/SDG&E Response to ORA’s Motion to Dismiss, SoCalGas/SDG&E stated at p. 21:

ORA’s complaint is odd because Applicants are seeking to save imposing additional costs on their customers, while ORA seems to insist on imposing those costs whether or not incurring those costs is necessary. Applicants have determined that Line 1600 can be de-rated to distribution service once the Proposed Project is constructed, and neither PSEP, D.11-06-017 nor P.U. Code § 958(a) require the de-rated Line 1600 to be pressure tested. Rather than applaud this cost savings, ORA seems to suggest that Applicants should pressure test Line 1600 even if the Proposed Project is constructed. Applicants are not aware of a compelling reason to do so.

¹²⁹ SoCalGas/SDG&E discuss derating Line 1600 in many places in their Application, including but not limited to: Amendment to the Application (pp. 2, 3, 5); Proponents’ Environmental Assessment (pp. 1-2, Chapter 2); Revised [February 2017] Testimony of Bisi (pp. 6, 13, 16); Prepared Testimony of Bonnett (pp. 1, 5); Revised [February 2017] Testimony of Kohls (formerly Navin) (pp. 1, 2, 5, 15-16, 21-22, 31); Prepared Testimony of Schneider (pp. 1, 8-16, 25, 26); Prepared Testimony of Sera (generally); and Supplemental Testimony (generally).

¹³⁰ In this sense, the term violation is used to describe operations in the technical, rather than a legal sense.

¹³¹ See Supplemental Testimony of SoCalGas/SDG&E, pp. 60-61. Also see, Prepared Testimony of Sera, pp. 2, 5-9.

¹³² This is the requirement under Public Utilities Code Section 958(c)(2).

1 class location changes,¹³³ and lack of document retention of operational records needed to
2 establish MAOP under the grandfather clause.^{134, 135}

3 **V. OTHER ISSUES**

4 ORA's examination of other issues in this proceeding includes recommendations
5 regarding Scoping Memo Question 15;¹³⁶ a review of inconsistent statements between
6 SoCalGas/SDG&E's Proponent's Environmental Assessment (PEA) and Cost
7 Effectiveness Analysis (CEA),¹³⁷ and testimony and other documents provided in this
8 Application regarding the pressure at which Line 1600 could be hydrotested; and
9 discrepancies between certain SoCalGas/SDG&E data responses to Commission staff
10 who work for different parts of the Commission.

11 **A. SoCalGas/SDG&E Should be Required to Update Their** 12 **Question PSEP Decision Tree**

13 SoCalGas/SDG&E should be required to update their PSEP Decision Tree. In
14 testimony, where the PSEP Decision Tree is referenced, SoCalGas/SDG&E omit the
15 latter part of the Decision Tree,¹³⁸ where the purpose of building a new line is shown as
16 allowing for the pressure testing of Line 1600,¹³⁹ not the derating of it. Unlike

¹³³ SoCalGas/SDG&E Response to ORA DR-25, Question 7. Although SoCalGas/SDG&E maintain no study needed to be conducted, PHMSA requires retention of study documents. *See*, PI 14-0005, p. 3, which states (emphasis added):

“Sections 192.517 and 192.603 require that all records regarding the pipeline MAOP determination be kept for the life of the pipeline segment, including records of pipe properties, pipeline component properties, pressure test records, class location studies, current class location designation, and operating history.”

¹³⁴ 49 CFR 192.619(c).

¹³⁵ SoCalGas/SDG&E Response to ORA DR-14, Question 2.

¹³⁶ November 4, 2016 Scoping Memo, p. 17.

¹³⁷ PU Code §1003(d) requires that “Every electrical and every gas corporation submitting an application to the commission for a certificate authorizing the new construction of any electric plant, line, or extension, or gas plant. . .shall include. . .[A] cost analysis comparing the project with any feasible alternative sources of power. The corporation shall demonstrate the financial impact of the plant, line, or extension construction on the corporation's ratepayers, stockholders, and on the cost of the corporation's borrowed capital. The cost analyses shall be performed for the projected useful life of the plant, line, or extension, including dismantling or inactivation after the useful life of the plant, line, or extension.”

¹³⁸ Prepared Testimony of Bisi, p. 7.

¹³⁹ D.14-06-007, Attachment 1, item #5 in the box at the bottom of the page (emphasis added):

1 SoCalGas/SDG&E, the Commission did not omit this step from the final decision that
2 adopted SoCalGas/SDG&E's Decision Tree.

3 Furthermore, the materials provided in the Application raise concern about issues
4 associated with post-1946 manufacturing techniques such as Electric Flash Welded
5 (EFW) and Electric Resistance Welded (ERW) seams. The adopted Decision Tree
6 focuses on vintage rather than pipeline characteristics.¹⁴⁰ If EFW and ERW pose a
7 safety threat, even if under certain circumstances, then parties and the Commission
8 should have the opportunity to examine the evidence in a proceeding that looks at that as
9 a general issue. As this may be a concern with more transmission pipe segments through
10 SoCalGas/SDG&E's system it is not adequate to look at it as part of this proceeding,
11 which SoCalGas/SDG&E have proposed to have focus on derating Line 1600 and
12 building Line 3602.¹⁴¹

13 **B. The Commission Should Consider the Safety**
14 **Consequences of SoCalGas/SDG&E's inconsistent**
15 **Statements with Its Own Witnesses about the Pressure at**
16 **Which Line 1600 Could Be Hydrottested, and the**
17 **Implications Those Inconsistent Statements Have on the**
18 **Maximum Allowable Operating Pressure**

19 ORA's review of the Application has revealed that certain parts of
20 SoCalGas/SDG&E's testimony and CEA used one hydrotest pressure value (1200 psig),
21 while other parts of Applicants' testimony use a different and conflicting hydrotest value
22 (960 psig) for establishing MAOP along Line 1600, as identified below.

"L#1600 - 54 miles of existing L#1600 to be TFI'd (Amended Workpapers, WP-IX-1-43). After 54 new miles installed in Phase 1B (Amended Workpapers, WP-IX-1-34), **then 45 miles of existing L#1600 will be pressure tested in Phase 1B** (Amended Workpapers, WP-IX-1-17)"

¹⁴⁰ D.14-06-007, Attachment 1, left of the box labelled "F".

¹⁴¹ ORA notes that SoCalGas/SDG&E have indicated they may bring forward an application regarding Line 85, which was constructed in 1931. Line 1027 (in 1949) and Line 49-18 (in 1958) were installed post 1946 but have flash welded seams. *See*, Prepared Testimony of Sera, Table 3, p. 10.

1 **1. First Statements by SoCalGas/SDG&E: Line 1600**
2 **Would Be Hydrotested at 1200 psig to Validate an**
3 **MAOP of 800 psig**

4 The PEA, in Chapter 5, states:¹⁴²

5 Line 1600 falls under the Applicants’ PSEP that requires documentation of
6 strength-testing by hydrostatic test to validate the Maximum Allowable
7 Operating Pressure of 800 pounds per square inch. In light of this legal and
8 regulatory framework, the No Project Alternative would include hydrostatic
9 testing of the existing Line 1600, but would not include the replacement or
10 installation of any new pipeline.
11

12 Consistent with the PEA, Pricewaterhouse Coopers (PwC) and SoCalGas/SDG&E
13 have proposed in their CEA operating Line 1600 at an 800 psig MAOP as an evaluation
14 criteria.¹⁴³ In order to support that 800 psig MAOP value, Kiefner originally ran
15 SoCalGas/SDG&E’s risk model assuming a pressure test to 1200 psig.¹⁴⁴

16 **2. Second Statements by SoCalGas/SDG&E: Line**
17 **1600 Would Only Be Hydrotested to 960 psig,**
18 **Which Would Validate an MAOP of 640 psig**

19 In contrast to SoCalGas/SDG&E’s statements to do a hydrostatic pressure test of
20 1200 psig, due to what SoCalGas/SDG&E characterized as a “miscommunication”,
21 Keifner, who provided part of SoCalGas and SDG&E’s supplemental testimony, re-ran
22 their analysis with a pressure test value of 960 psig (which would support a MAOP of
23 640 psig).¹⁴⁵ The 960 psig pressure test is also used throughout the Kiefner report.¹⁴⁶

¹⁴² PEA, Chapter 5, p. 5-35.

¹⁴³ Corrected CEA, p. 36. A 1200 psig pressure test is needed to support an MAOP of 800 psig under 49 CFR 192.619.

¹⁴⁴ SoCalGas/SDG&E Supplemental Testimony, Attachment C – Review of Risk Factors for Line 1600, p. 30. “The columns labeled “L1600 Hydrotest” represents the POF scores after the line has passed a hydrostatic pressure test to an internal pressure of 1,200 psig.” In response to SoCalGas/SDG&E Response to ORA DR-69, Question 32, this was an error and will be corrected during hearings.

¹⁴⁵ SoCalGas/SDG&E Response to ORA DR-69, Question 32.

¹⁴⁶ SoCalGas/SDG&E Supplemental Testimony, Attachment C – Review of Risk Factors for Line 1600, p. 26. *Also see*, Figure 11 (p. 26), Figures 12 and 13 (p. 27),

1 The updated testimony of Kohls (which replaced the testimony of Navins), calls for a 960
2 psig pressure test.¹⁴⁷

3 ORA is concerned about SoCalGas/SDG&E identifying different pressure test
4 levels for Line 1600 in different parts of its application. ORA understands that the
5 Keifner analysis conducted regarding the strength of Line 1600, indicates that Line 1600
6 could have failed at least at one point, and perhaps two points, if tested to 1200 psig.¹⁴⁸
7 Differing statements with increasing conservatism (from 1200 psi when the application
8 was filed, to 960 psig in testimony filed half a year later) may indicate that the Applicants
9 have identified information indicating that Line 1600 is not safe at a MAOP of 800
10 psig,¹⁴⁹ and would not have met federal requirements to justify an MAOP of 800 psig.¹⁵⁰
11 ORA is also concerned that these conflicting statements leave it unclear as to the actual
12 proposed pressure test level (960 psig, or 1200 psig) if the pressure test alternative is
13 selected.¹⁵¹

14 **C. The Commission Should Consider the Safety Implications**
15 **of Discrepancies Between Certain SoCalGas/SDG&E**
16 **Data Responses to Commission Staff Who Work for**
17 **Different Parts of the Commission**

18 Regarding the same part of Line 1600, SoCalGas/SDG&E have provided one set
19 of values about yield strengths and wall thickness to the Commission’s Safety and
20 Enforcement Division (SED); and another inconsistent set of values about yield strengths
21 and wall thickness to ORA. Specifically, SoCalGas/SDG&E’s engineering analyses

¹⁴⁷ Updated Testimony of Kohls, L1600 Hydrotest Study and Cost Estimate, dated March 21, 2016, pp. 2 & 4.

¹⁴⁸ SoCalGas/SDG&E Response to ORA DR-69, Question 23.

¹⁴⁹ In this sense, ORA is using the criteria of non-compliance with 49 CFR 192, which is the “minimum safety requirements” established under federal law. Since PU Code § 958 requires a pressure test (or replacement) a segment of pipe that would fail a pressure test is not meeting the federal safety requirements.

¹⁵⁰ See 49 CFR Section 192.619.

¹⁵¹ Line 1600 currently has an MAOP of 512 psig, but only due to the Commission requiring an MAOP reduction below the lower of the two MAOP’s at issue in the discrepancy identified here.

1 provided in a data response to SED¹⁵² omitted the lower yield strengths and thinner wall
2 values. The yield strengths and thinner wall values are identified by SoCalGas/SDG&E's
3 records and included in a data response to ORA.¹⁵³ SoCalGas/SDG&E has stated in
4 response to ORA Data Request 19, Question 7, that the information provided in the data
5 response to ORA "is the current status of Line 1600, which accounts for changes to the
6 pipeline due to various reasons, such as replacements or relocations."¹⁵⁴

7 VI. CONCLUSION

8 The Commission should adopt ORA's proposal to investigate the proper MAOP of
9 Line 1600, pressure test the line with gas to establish an MAOP of 325 psig, and then
10 derate Line 1600 to 325 psig, in order to ensure that it complies with federal and state
11 regulations and law.

12 Additionally, the Commission should:

- 13 • Require SoCalGas/SDG&E to update their PSEP Decision Tree;
- 14 • Examine the safety consequences of SoCalGas/SDG&E's documents
15 regarding pressure testing Line 1600; and
- 16 • Consider the safety consequences of discrepancies between pipeline
17 characteristics provided to staff working for different parts of the
18 Commission.

¹⁵² SoCalGas/SDG&E Response to SED DR-03, Question 2. SED asked for "A segment by segment engineering analysis for the entire Line 1600 with any unknown pipeline characteristics identified and any assumed values detailed." The attachment has been identified as confidential by SoCalGas/SDG&E, and is included in Ex. ORA-02-C, Confidential Workpapers and Supporting Attachments of M Botros.

¹⁵³ SoCalGas/SDG&E Response to ORA-19, Question 7.

¹⁵⁴ SoCalGas/SDG&E Response to ORA-19 Question 7.

