

**Public Comment Summaries and Responses regarding the  
GAS STORAGE WELL COMPREHENSIVE SAFETY REVIEW and the PROPOSED PRESSURE LIMITS  
for the ALISO CANYON NATURAL GAS STORAGE FACILITY**

**INTRODUCTION**

Public Resources Code 3217 (d), added by [Senate Bill 380 \(Chapter 14, statutes of 2016, Pavley\) \(SB 380\)](#), requires the Division of Oil, Gas, and Geothermal Resources (DOGGR), before authorizing injections to resume at the Aliso Canyon Gas Storage Facility, to hold at least one duly noticed public meeting. SB 380 states that the purpose of the meeting is to provide the public an opportunity to comment on the [comprehensive safety review findings](#) and the [proposed minimum and maximum reservoir pressure](#) at the facility. After giving notice on January 17, 2017, DOGGR held two public meetings where public testimony was transcribed on February 1 and 2, 2017, in Woodland Hills, California. Written comments were accepted January 17 through February 6, 2017.

At the two public meetings and during the public comment period, over 400 individuals and entities submitted comments to DOGGR via email, mail, fax, and in person. All of the comments received are available on the DOGGR’s [website](#). They ranged from detailed comments on the safety review, proposed pressure limit, and general safety of the facility to the need for a health impact assessment and general calls to permanently close the facility. Many comments were outside the scope of the public meeting as described in SB 380 and, at times, referred to subject matter beyond DOGGR’s legal authority. For the sake of transparency and acknowledgement of public concerns, DOGGR responded to all comments received and, where appropriate, identified additional resources that may address the stated concerns.

In considering and responding to comments, DOGGR assigned each comment document received and each individual who spoke at a public meeting a unique identification number (e.g., 0001). (See Tables 1 and 2 below, respectively.) That identification number precedes the successively numbered comments made in the document or by the individual (e.g., 0001-1, 0001-2, 0001-3, etc.). The same or similar comments were grouped together and jointly summarized to avoid repeating responses. The comment summaries and DOGGR’s responses (*in italics*) immediately follow Tables 1 and 2.

**Table 1. Identification numbers for written comments**

<b>Number</b>	<b>Name and/or Entity</b>
0001	Board of Supervisors (County of Los Angeles)
0002	Issam Najm, President (Porter Ranch Neighborhood Council)
0003	Donna Siers
0004	Sharon Dormani
0005	Celina Vela
0006	Kelly Browne
0007	Ginny Khsheshvadjan
0008	Jessica Kim
0009	Susan Haney
0010	Seza Kouyoumjian
0011	Amelia Lacap
0012	Wade Trimmer
0013	Theresa Brady

0014	Nancy Hernandez
0015	Richard Matthews, Board Member (Save Porter Ranch)
0016	Mitch Federer
0017	Andrew Krowne
0018	Patricia Islikaplan
0019	Leslie Magidsohn
0020	Susan Gorman Chang
0021	Lauralyn Shaw
0022	Sandie Minasian
0023	Lorraine Lundquist
0024	Slyvia Rostami
0025	Lori Choi
0026	Danny Caudillo
0027	Brian Skipper
0028	Jason Muckenthaler
0029	Den OLeary
0030	Sarah Yun
0031	Lizasj Wan
0032	Christy Call
0033	Holly Padilla
0034	Jimmie Baker
0035	Shirley Sofer
0036	Naomi Curland
0037	Anastasia Balanos
0038	Janice Schneider
0039	Crystal Smith
0040	Darrell Park
0041	Erica Lee
0042	Jennifer Greene
0043	Elena Semper
0044	Laurie Carter
0045	Shawn Herman
0046	Todd Daly
0047	Carole Elliot
0048	Janice Nardella
0049	Angela Suarez
0050	Harvey Glueck
0051	Manoj Desai
0052	Rania Shanny
0053	Angiee Suarez
0054	David Tarlow
0055	Dean Markado
0056	Evan [Last name not provided with comment]
0057	Jennifer Glueck
0058	Nancy Linholm
0059	Jennifer Toth

0060	Cathy Plotin
0061	Steven Maiken
0062	Debbie Caplan
0063	Tanya Harper
0064	Vikki Salmela
0065	Gayle Grech
0066	Martik Begi
0067	Lisa Zimmitti
0068	Laurel Gal
0069	[Name not provided with comment]
0070	Sue Holl
0071	Pratik Patel
0072	Nerissa Forbes
0073	Nobu Yoshia
0074	Sherry Lucks
0075	Sanjay Kulkarni
0076	Dr. Tom Williams
0077	John Herweg
0078	Maria Herweg
0079	Akira Brathwaite
0080	Dave Deno
0081	Ingrid Labutis
0082	Reuben Franco
0083	Aileen Nowatzki
0084	Allen Wagner
0085	Sandi Naiman
0086	Irene Smith
0087	Thomas Schienbein
0088	Tiffany Traver
0089	Linda Levy
0090	Susie Choi
0091	Behnaz Partovi
0092	Robert Brown
0093	Nairi Kureghian
0094	Emanouel Ourshano
0095	Ramsey Eldib
0096	Isabel Oriente
0097	Jorge Marquez
0098	Cheryl Todd
0099	Emerald Snow
0100	Danielle Michaels
0101	Jessica Spotts
0102	Janice Striegel
0103	Jim Park
0104	Joe & Gloria Choi
0105	Ryan Ransdell

0106	Diane Gold
0107	Dennis Rowlands
0108	Marc Herman
0109	Morgan Kaczor
0110	Tom Nachtrab
0111	John C. Wiczek
0112	Leonard Nicholson
0113	Guillermo Lecuona
0114	Ilsa Marusa
0115	Peter Rabadi
0116	Adrienne Brooks
0117	Phyllis Butts
0118	Hong Hyun Ahn
0119	Christopher Choi
0120	Dorothy Henry
0121	Mel Mitchell
0122	Vartan Pirlant
0123	Craig Galanti
0124	Elizabeth Tracton
0125	Tina Deis
0126	Dave Hasson
0127	[Name not provided with comment]
0128	Candyjo Dahlstrom
0129	Rick Schenkel
0130	Bhavna Battu
0131	Christian & Mari Coerds
0132	Cliff Rayman
0133	Alissa Rockhold
0134	Joy Krauthammer
0135	Cristina Huerta Boykins
0136	Shelly Schwartz
0137	Ledenilla Hernandez
0138	Mark Morris
0139	Karen L. Goldman
0140	Frances Gateward
0141	David Klein
0142	David Shell
0143	Rimma Sigal
0144	Michael Smith
0145	Paulina Aguirre
0146	Clara Tavaréz
0147	Charlie Jacquo-Stevenson
0148	Wileen and Greg Kromhout
0149	Laurie Bernal
0150	David Lasher
0151	Kelli Rice

0152	Bridget Brownell
0153	Shiumei Lin
0154	Marena Lin
0155	Shri Agarwal
0156	Carey Family
0157	Halleh Attai
0158	Nancy H. Spiegel
0159	Jeevan Anand
0160	Hal DeJong
0161	Richard Allen
0162	William Bauer
0163	Lea Dixon
0164	Jeena Cassidy
0165	Justin Bauer
0166	Jennifer Marotta
0167	Betty Collins
0168	Jane Tanger
0169	Carol Shelden
0170	Bernard Fowler
0171	Jackie Rumteen
0172	Jane Fowler
0173	Afsaneh Anvarhosseini
0174	Mayko and Al Martinez
0175	Donald J. Lombardo
0176	Howard J. Schwartz and Martha E. Laff
0177	Ham family
0178	Neil Reizman
0179	Laura Rosenberger
0180	Jon Teboe
0181	Arbella MikhaelFard
0182	Patricia Chitjian
0183	Priyaanka Chatham
0184	Barbara O'Brien
0185	Behnam
0186	Dwight R. Herr
0187	Roberta Allen
0188	Maureen & Larry Capra
0189	Ethan Senser
0190	[Name not provided with comment]
0191	Wendy and Barry Krowne
0192	Rose Ann Witt
0193	Wendy Cohen
0194	Cyrous Davoodian
0195	Andrea King, Bruce King, Carly King, Crysta King, and Christian King
0196	Kiki Lyon
0197	Bjorn Paulsson

0198	David Goldstein
0199	Debby Boka
0200	Denise Hirsch-Shell
0201	Ben Pongetti
0202	Scott Smith
0203	Ron Martin
0204	Alex Fierro-Clarke
0205	Stefany Vad
0206	Kate Dennis-Skillings
0207	Stan Renfro
0208	Jill Brown
0209	Paul Saldana
0210	Gary Hoover
0211	John Dixon
0212	F.P. Scocilich
0213	Catherine Fowler
0214	Caitlin Lowerre
0215	Courtenay Edelhart
0216	Diane Charles
0217	Kristy Pace
0218	Art [Last name not provided with comment]
0219	Margaret Hinch
0220	Elenor Avanesian
0221	Amy Daly
0222	David Bond
0223	George H. Denny
0224	Margery Brown
0225	Rebekka Hosken
0226	Arlene Stein
0227	Jennifer Taylor
0228	Daniel Smith
0229	Jay and Adrienne Carsman
0230	Lynette K. Henderson
0231	Carly Dempsey
0232	Winona Dorris
0233	Liz Tigelaar
0234	Blythe Robe
0235	Sam & Ingrid Labutis
0236	Dina Amato
0237	Teresa Donnelly
0238	Daniel Guimera
0239	Melanie Sarkisyan
0240	Karen Hughes
0241	Sharon Bricker
0242	Lori Kalman
0243	Dave Elliott

0244	Michelle Thierault
0245	Robert Kahane
0246	Paul Little (Pasadena Chamber of Commerce)
0247	Rashelle Zelaznik
0248	Bernard Singer
0249	Alice Kaczor
0250	Ann Dorsey
0251	Richard Bratkovich
0252	Tatiana David
0253	Vartan Derohanian
0254	Karen Fogerty
0255	Patty Glueck
0256	Christine Soderlund
0257	Tayler Knight
0258	Kelly, Ray, and Matthew Hill
0259	Joseph K. Goldstein
0260	Patricia Larcara
0261	Joni Spiers
0262	Fredericka McGee (American Beverage Association)
0263	Amy Roth
0264	Jay R. Duke (Antelope Valley Boys and Girls Club)
0265	Gary Cushing (Camarillo Chamber of Commerce)
0266	Kim Yamasaki (Center for Asian Americans United for Self-Empowerment)
0267	Kenneth Oplinger (The Chamber of the Santa Barbara Region)
0268	Nancy A. Lyons (City of Diamond Bar)
0269	Gretchen Gutierrez (Desert Valleys Builders Association)
0270	Douglas H. Hamilton
0271	Tim O'Connor (Environmental Defense Fund)
0272	Thomas L. Davis (Geologic Maps Foundation, Inc.)
0273	Kimberly Maevers (Greater Antelope Valley Economic Alliance)
0274	Jill Lederer (Greater Conejo Valley Chamber of Commerce)
0275	Nancy Hoffman (Greater San Fernando Valley Chamber of Commerce)
0276	Catherine H. Reheis-Boyd (Western States Petroleum Association)
0277	Nick & Heidi Tortirici
0278	Herbert S. Emmrich
0279	Jacki Swift
0280	Jackie Petralia
0281	Jeevan Anand
0282	Jennifer Millbauer
0283	Joseph K. Goldstein
0284	Kendi Kim
0285	Richard D. Chapman (Kern Economic Development Corporation)
0286	Michael Turnipseed (KernTax)
0287	Erin K. Pak (Kheir Center)
0288	Gary Toebben (Los Angeles Area Chamber of Commerce)
0289	Larry Vad

0290	Leonard Chansky
0291	Lori Aivazian
0292	Matthew dAlessio (California State University, Northridge)
0293	Peggi Hazlett (Ontario Chamber of Commerce)
0294	Bryan Starr (Orange County Business Council)
0295	Rick J. Muth (ORCO Block & Hardscape)
0296	Paul Hunt
0297	Richard Guy
0298	Jeff Allred (San Gabriel Valley Economic Partnership)
0299	Joe Armendariz (Santa Barbara County Taxpayers Association)
0300	Joe Armendariz (Santa Barbara Industry and Technology Association)
0301	Matt Pakucko, President (Save Porter Ranch)
0302	Andres Herrera (HAV & Associates)
0303	Senator Bob Huff
0304	Stephanie Karp
0305	General Support Petition
0306	Michael Lizarraga (TELACU Industries)
0307	Peter Choi (Temple City Chamber of Commerce)
0308	Marian E. Jocz (United Chamber of Commerce, San Fernando Valley & Region)
0309	Stephanie Caldwell (Ventura Chamber of Commerce)
0310	Liz Wynn (Visalia Emergency Aid Council)
0311	Castulo de la Rocha (AltaMed)
0312	Lanny Ebenstein (California Center for Public Policy)
0313	William Emmerson (California Hospital Association)
0314	Representative from Central City Association of Los Angeles
0315	Marvin Martinez (East Los Angeles College)
0316	Futureports
0317	Dennis Gutierrez (Greater Monterey Park Chamber of Commerce)
0318	Leticia D. Chacon (Human Services Association)
0319	Erin K. Pak (Kheir)
0320	Lou Calanche (Legacy LA)
0321	Gary Toebben (Los Angeles Chamber of Commerce)
0322	Gilbert F. Ivey, David Fleming, Tracy Hernandez (Los Angeles County Business Federation)
0323	Martin Castro (Mexican American Opportunity Foundation)
0324	Ruben Rojas (Montebello Unified School District)
0325	Terry Marques (Mothers of East Los Angeles)
0326	Nick Sarkisian (Nasa Services)
0327	Terry Tornek, Mayor (Office of the Mayor Pasadena)
0328	Bryan Starr (Orange County Business Council)
0329	Veronica Padilla (Pacoima Beautiful)
0330	Darin Fields (Phillips 66)
0331	Teresa Dreyfuss (Rio Hondo College)
0332	Joseph Tack (Sweetener Products Company)
0333	Stephen Konig (Tesoro)
0334	Kevin Tamaki (The Valley Industry and Commerce Association)
0335	Victor Dominguez (The YMCA)

0336	Marian Jocz (United Chambers of Commerce, San Fernando Valley & Region)
0337	Deborah Villar (Via Care)
0338	William Jones (Los Angeles County Fire Department)
0339	Cyrus Rangan (County of Los Angeles Department of Public Health)
0340	Calvin Barnhill (Northstar Exploration Company)

**Table 2.** Identification numbers for oral comments

<b>Number</b>	<b>Name and/or Entity</b>
0341	Taylor Criddle on behalf of Assemblyman Dante Acosta
0342	Erick Matos on behalf of Los Angeles County Supervisor Katherine Barger
0343	Marcel Rodarte, Former Mayor (City of Norwalk)
0344	Lisa Molton on behalf of Congressman Steve Knight
0345	Issam Najm, President (Porter Ranch Neighbor Council)
0346	Scott (County of Los Angeles) [Last name not captured by stenographer]
0347	Bill Johnson (Los Angeles County Fire Department)
0348	Matthew d'Alessio (California State University, Northridge)
0349	Daniel [Last name not captured by stenographer]
0350	Angelo J. Bellomo (Los Angeles County Department of Public Health)
0351	Joel Goldstein
0352	Richard Matthews
0353	Gary Passmore
0354	Gloria Calvin
0355	Andrew Krowne, Treasurer (Porter Ranch Neighborhood Council)
0356	Craig Galanti
0357	Paul Hunt
0358	Christine Sutherland
0359	Lorraine Lundquist
0360	Bill Maxwell
0361	Danielle Michaels
0362	Cameron Michaels
0363	Pare [Last name not captured by stenographer]
0364	Tom Davis
0365	Jason Hector
0366	John Fleming
0367	Kyoto [Last name not captured by stenographer]
0368	Leslie [Last name not captured by stenographer]
0369	Matt Pakucko, President (Save Porter Ranch)
0370	Helen Ridnour
0371	Rick [Last name not captured by stenographer]
0372	Mark Grech
0373	Darryl Pack
0374	Diane Pinky Harmon
0375	Ms. Sherman [First name not captured by stenographer]
0376	Deidre [Last name not captured by stenographer]
0377	Vicki [Last name not captured by stenographer]
0378	Andrea [Last name not captured by stenographer]

0379	Carol Travis
0380	Unidentified Speaker
0381	Jane Fowler
0382	Unidentified Speaker
0383	Darryl Gail
0384	Unidentified Speaker
0385	Patricia [Last name not captured by stenographer]
0386	Alexandra [Last name not captured by stenographer]
0387	Unidentified Speaker
0388	Unidentified Speaker
0389	Mike Young
0390	Helen [Last name not captured by stenographer]
0391	Unidentified Speaker
0392	Unidentified Speaker
0393	Unidentified Speaker
0394	Unidentified Speaker
0395	Len [Last name not captured by stenographer]
0396	Christine Galanti
0397	John Korver
0398	Brian [Last name not captured by stenographer]
0399	Ben [Last name not captured by stenographer]
0400	Judith [Last name not captured by stenographer]
0401	Unidentified Speaker
0402	Shirley [Last name not captured by stenographer]
0403	Christina [Last name not captured by stenographer]
0404	Unidentified Speaker
0405	Kevin [Last name not captured by stenographer]
0406	Jim Summers
0407	Walter Foley
0408	Unidentified Speaker
0409	Unidentified Speaker
0410	Unidentified Speaker
0411	Unidentified Speaker
0412	Unidentified Speaker
0413	Unidentified Speaker
0414	Unidentified Speaker
0415	Unidentified Speaker
0416	Unidentified Speaker
0417	Senator Henry Stern
0418	Mitch Englander, Council Member (City of Los Angeles)
0419	Katherine Margo
0420	Walter Ufoff
0421	Angelo J. Bellomo (Los Angeles County Department of Public Health)
0422	Scott Grossman
0423	Cameron Annum
0424	Unidentified representative on behalf of Congressman Brad Sherman

0425	Susan Gorman-Chang
0426	Edger Alive
0427	Fernandez [First name not captured by stenographer]]
0428	Jennifer Wilbur
0429	Bertha Limestone
0430	Ben Casemore
0431	Cheri Derohanian
0432	Unidentified Speaker
0433	Sykes [First name not captured by stenographer]

## **COMMENT SUMMARIES AND RESPONSES**

### **Resume Natural Gas Injection at the Aliso Canyon Storage Facility**

0012-1, 0028-1, 0058-1, 0069-1, 0082-1, 0097-1, 0144-1, 0160-1, 0161-1, 0196-1, 0201-1, 0209-1, 0212-1, 0243-1, 0264-1, 0265-1, 0266-1, 0267-1, 0269-1, 0273-1, 0275-1, 0276-1, 0278-1, 0299-1, 0300-1, 0302-1, 0304-1, 0305-1, 0306-1, 0307-1, 0308-1, 0309-1, 0310-1, 0311-1, 0312-1, 0313-1, 0314-1, 0315-1, 0316-1, 0317-1, 0318-1, 0319-1, 0320-1, 0321-1, 0322-1, 0323-1, 0324-1, 0325-1, 0326-1, 0327-1, 0328-1, 0329-1, 0330-1, 0331-1, 0332-1, 0333-1, 0334-1, 0335-1, 0336-1, 0337-1, 0426-1, 0427-1

**Comment Summary 1:** Statements of general support for the opening of the Aliso Canyon Gas Storage Facility. Many residents in the region are poverty-stricken and underserved. If the Aliso Canyon Gas Storage Facility is not allowed to resume injection and sufficient storage is not available, natural gas prices will spike and electricity costs will rise. If the Aliso Canyon Gas Storage Facility doesn't resume injection, many will have to import energy and increase diesel fuel use at the expense of the environment and environmental justice. The Aliso Canyon Gas Storage Facility saves consumers money, stimulates the local economy, increases taxes revenue, and creates jobs. Also, many of those claiming to be sick were persuaded to believe the symptoms were due to the leak. Much opposition to reopening the Aliso Canyon Gas Storage Facility is driven by anti-fossil fuel sentiments and hysteria. California has the strictest oil and gas production and procedure regulations in the world. Since Californians live in a time in which we are dependent on gas, it is best and safest to produce, handle, and store under the stringent regulations. Creating another gas storage facility elsewhere would create significant adverse environmental impacts of its own and would likely consume open spaces that are so vitally needed in population-dense Southern California.

**Response 1:** *The purpose of the public meeting as required by [SB 380](#) was to provide members of the public an opportunity to comment on the [safety review findings](#) and the [proposed minimum and maximum reservoir pressure](#) at the Aliso Canyon Gas Storage Facility. DOGGR's safety review and pressure limit, as well as other regulatory requirements, are intended to ensure that any risks associated with operating the Aliso Canyon Gas Storage Facility are evaluated and minimized.*

*The CPUC provided additional comment responses related to energy reliability in the addendum at the end of this document.*

*For information related to electricity reliability and rates please visit: <http://www.cpuc.ca.gov/aliso/>.*

0028-1, 0058-1, 0097-1, 0126-1, 0144-2, 0201-1, 0202-1, 0209-1, 0237-1, 0243-1, 0245-1, 0246-1, 0262-1, 0263-1, 0266-2, 0267-1, 0268-1, 0269-1, 0273-1, 0274-1, 0275-1, 0276-2, 0278-1, 0278-2, 0285-1, 0286-1, 0287-1, 0288-1, 0293-1, 0294-1, 0295-1, 0298-1, 0299-1, 0303-1, 0305-1, 0307-1, 0308-1, 0313-1, 0315-1, 0316-1, 0318-1, 0319-1, 0320-1, 0321-1, 0322-1, 0323-1, 0324-1, 0325-1, 0327-1, 0328-1, 0330-1, 0331-1, 0333-1, 0334-1, 0335-1, 0336-1, 0337-1

**Comment Summary 2:** Reopening the field is necessary to provide a safe and reliable source of natural gas to millions of residents, organizations, and businesses in Southern California. Shortages of natural gas could result in rolling blackouts and impact both public safety (e.g., loss of energy to power life-saving equipment and hospitals) and the local economy (e.g., from businesses and organizations shutting down and lost wages), especially in the event of another cold snap. Until there is a solution to providing natural gas to this region, this facility should remain open.

**Response 2:** As mentioned in **Response 1**, pursuant to [SB 380](#), the purpose of the public meeting and the comment period was to provide members of the public an opportunity to comment on the [safety review findings](#) and the [proposed minimum and maximum reservoir pressure](#) at the Aliso Canyon Gas Storage Facility. The question of energy reliability and the necessity of the facility will be considered in a different forum. Also, pursuant to SB 380, the California Public Utilities Commission (CPUC) has a proceeding to evaluate the feasibility of minimizing or eliminating the use of Southern California Gas (SoCalGas) Company's Aliso Canyon Gas Storage Facility while still maintaining energy and electric reliability for the Los Angeles region at just and reasonable rates in California. More information is available at: <http://www.cpuc.ca.gov/aliso/>.

The CPUC provided additional comment responses related to energy reliability in the addendum at the end of this document.

0069-1, 0202-1, 0209-1, 0266-2, 0267-1, 0274-1, 0275-1, 0276-2, 0285-1, 0286-1, 0293-1, 0298-1, 0300-1, 0308-1, 0312-1, 0317-1, 0320-1, 0328-1, 0336-1

**Comment Summary 3:** DOGGR should base its decision on what is best for the region or State as a whole. Local blackouts and a limited supply of natural gas should be of concern to everyone in the Southern California community. The Aliso Canyon Gas Storage Facility is essential to support the population and economic growth projected for California.

**Response 3:** DOGGR will base the decision to allow injection at the facility on considerations related to safety. The question of energy reliability and the necessity of the facility will be considered in a different forum. The CPUC has opened a proceeding to evaluate the feasibility of minimizing or eliminating the use of SoCalGas Company's Aliso Canyon Gas Storage Facility while still maintaining energy and electric reliability for the Los Angeles region and just and reasonable rates in California. To find out more please go to <http://www.cpuc.ca.gov/aliso/>.

The CPUC provided additional comment responses related to energy reliability in the addendum at the end of this document.

## **Demonstrated Safety and Fitness**

0082-1, 0126-1, 0202-1, 0209-1, 0243-1, 0246-1, 0266-2, 0268-1, 0273-1, 0274-1, 0275-1, 0278-1, 0287-1, 0298-1, 0302-1, 0303-1, 0305-1, 0306-1, 0307-1, 0308-1, 0309-1, 0310-1, 0317-1, 0319-1, 0323-1, 0324-1, 0325-1, 0329-1, 0330-1, 0331-1, 0333-1

**Comment Summary 4:** Comments point out that SoCalGas has taken measures to increase and enhance safety, including installing new production tubing in every well planned for injection and withdrawal operations. The wells passed a comprehensive battery of tests developed in consultation with third-party experts, demonstrating that the field is safe to resume injection operations.

***Response 4:** DOGGR agrees that gas storage operations at the Aliso Canyon Gas Storage Facility should be conducted as safely as possible. Pursuant to State Oil and Gas Supervisor [Order No. 1109](#), SoCalGas was required to demonstrate integrity and safety of each well at the facility and, among other things, required that injection and withdrawal only be allowed through tubing and packer. The commenters are correct in that SoCalGas has undertaken a number of activities that were necessary to demonstrate well safety and integrity including the installation of casing liners, new tubing, improved monitoring and leak detection, and other safety improvements.*

## **Reopen With Improvements**

0150-1, 0160-2, 0353-1, 0424-3

**Comment Summary 5:** These comments generally support resuming injection at the Aliso Canyon Gas Storage Facility as long as safety valves and other infrastructure are in place to prevent future leaks. They argue that the gas storage is necessary, but that SoCalGas should make the pipes and valves safe and effective to prevent future leaks.

***Response 5:** DOGGR agrees that gas storage operations at the Aliso Canyon Gas Storage Facility should be conducted as safely as possible. Consistent with the statutory requirements of [Senate Bill 887 \(Pavley, Chapter 673, Statutes of 2016\)](#) (SB 887) and [Order No. 1109](#), all wells at the facility are required to undergo a series of mechanical integrity tests. These testing requirements, described in detail in **Response 11**, are proactive and designed to prevent leaks before they occur. In the event a leak does occur, all wells at the facility are now equipped with real-time pressure monitoring, so that leaks can be detected and responded to immediately. All wells injecting or producing at the facility are required to have multiple layers of protection and must meet a performance standard that ensures any single point of failure in the well does not pose an immediate threat of loss of control of gas. With respect to safety valves, [the emergency regulations](#) require that any existing safety valves be tested every six months. Additionally, the [proposed permanent regulations](#), which are in the rulemaking process, require that facility risk management plans take into consideration specific risk factors to evaluate the appropriateness of surface and/or subsurface automatic or remote actuated safety valves at each well.*

*Additional discussion of subsurface safety valves can be found in **Response 31**.*

## **General Opposition to Resumption of Injection at the Facility**

0017-3, 0017-2, 0023-2, 0123-4, 0123-6, 0125-1, 0125-2, 0125-4, 0128-1, 0135-1, 0137-1, 0140-2, 0142-2, 0143-1, 0143-3, 0145-2, 0146-3, 0147-2, 0147-3, 0147-5, 0149-3, 0153-2, 0154-2, 0156-3, 0158-1, 0168-1, 0178-4, 0182-2, 0182-3, 0185-1, 0186-3, 0186-4, 0186-5, 0187-1, 0188-2, 0190-1, 0191-2, , 0190-2, 0191-3, 0198-2, 0205-2, 0221-1, 0224-2, 0225-2, 0225-3, 0228-3, 0242-5, 0238-1, 0242-3, 0242-6, 0251-1, 0255-5, 0255-7, 0255-8, 0256-1, 0258-3, 0259-3, 0261-2, 0261-6, 0271-1,

0271-3, 0281-1, 0282-2, 0282-3, 0283-3, 0290-2, 0291-3, 0301-5, 0368-1, 0369-1, 0373-1, 0382-1, 0391-1, 0397-1, 0403-1, 0404-1, 0406-1, 0410-1, 0416-1, 0374-2, 0378-2, 0428-1, 0433-1, 0424-2

**Comment Summary 6:** Many commenters expressed mistrust of SoCalGas and believe that SoCalGas operated in bad faith over the years and that the Aliso Canyon Gas Storage Facility has not been regulated effectively. Commenters complain that SoCalGas has caused fires and gas leaks and not notified residents in a timely manner when they occur; SoCalGas has not apologized for the blowout; DOGGR has not explained why the blowout occurred or addressed penalties for SoCalGas apparently falsifying well records; DOGGR and CPUC have not provided adequate regulatory oversight of the facility; elected officials and CPUC appointees appear to be in the pockets of the oil and gas industry; and a decision to open this facility was made because profits matter more than people.

***Response 6:** Consistent with [SB 380](#), the purpose of the public meeting and the comment period was to provide members of the public an opportunity to comment on the [safety review findings](#) and the [proposed minimum and maximum reservoir pressure](#) at the gas storage facility. While the content in these comments is generally not germane to this purpose, DOGGR, as well as other regulatory agencies such as the California Air Resources Board (CARB), agree that increased regulatory oversight is warranted. DOGGR has promulgated [emergency regulations](#) applicable to all gas storage facilities in the State; issued [Order No. 1109](#), specifically ordering SoCalGas to undertake a stringent battery of mechanical integrity tests and improve the safety of operations at the facility; and is in the process of promulgating [permanent regulations](#) for underground gas storage facilities.*

*In the past, underground gas storage operations were broadly regulated under DOGGR's Underground Injection Control program. However, underground gas storage operations have differing and distinct concerns and practices that should and are now being considered separately. Shortly after the catastrophic blowout at the Aliso Canyon Gas Storage Facility, DOGGR promulgated [emergency regulations](#) establishing requirements specific to underground gas storage operations in the State. These emergency regulations address daily inspection, leak detection, mechanical integrity testing, pressure testing, safety valves, pressure limits, and risk management plans. In addition to the emergency regulations and [Order No. 1109](#), DOGGR is currently in the process of promulgating comprehensive [permanent regulations](#) for the oversight of underground gas storage operations in the State. Consistent with the statutory requirements of [SB 887](#), the proposed permanent regulations address well construction standards, specified engineering and geologic studies, risk management plans, emergency response, mechanical integrity testing, daily monitoring, leak detection, and inspections.*

*CARB is also promulgating [regulations](#) to minimize leaks from oil and gas production including underground gas storage facilities.*

### **Shut It Down / Keep it Closed (Permanently or Temporarily)**

0001-28, 0011-1, 0003-1, 0004-1, 0005-1, 0008-1, 0009-1, 0013-1, 0014-1, 0015-1, 0015-2, 0016-1, 0017-1, 0018-1, 0019-1, 0020-9, 0021-1, 0022-2, 0024-1, 0026-1, 0027-1, 0029-1, 0030-1, 0031-1, 0032-1, 0034-1, 0035-1, 0036-1, 0037-1, 0038-1, 0039-1, 0040-1, 0041-1, 0042-1, 0043-1, 0044-1, 0045-1, 0046-1, 0047-1, 0048-1, 0050-1, 0051-1, 0052-1, 0054-1, 0055-1, 0056-1, 0057-1, 0059-1, 0060-1, 0061-1, 0062-1, 0063-1, 0064-1, 0065-1, 0066-1, 0067-1, 0068-1, 0070-1, 0071-1, 0074-1, 0075-1, 0077-1, 0078-1, 0079-5, 0080-1, 0081-1, 0083-1, 0084-1, 0085-1, 0086-1, 0087-1, 0088-1, 0089-1, 0090-1, 0091-1, 0092-1, 0093-1, 0094-1, 0095-1, 0098-1, 0100-1, 0101-1, 0104-1, 0105-1, 0106-1, 0107-1, 0108-2, 0109-1, 0111-1, 0112-1, 0113-1, 0114-1, 0115-1, 0116-1, 0117-1, 0118-1, 0120-1, 0121-1, 0122-1, 0123-1, 0124-1, 0125-3, 0127-1, 0130-1, 0131-1, 0132-2, 0133-1, 0134-1, 0135-3, 0136-1, 0138-1, 0139-1, 0140-3, 0141-1, 0142-1, 0143-4, 0146-1, 0147-1, 0148-1, 0149-1,

0151-1, 0153-1, 0153-3, 0154-1, 0154-3, 0155-1, 0156-1, 0156-2, 0157-1, 0158-1, 0162-1, 0163-1, 0164-1, 0165-1, 0167-1, 0168-3, 0169-1, 0170-1, 0171-1, 0173-1, 0174-1, 0176-1, 0178-1, 0179-1, 0180-1, 0183-1, 0185-2, 0185-3, 0186-1, 0186-2, 0187-1, 0188-1, 0188-3, 0189-1, 0190-1, 0191-1, 0193-1, 0194-1, 0195-1, 0198-1, 0203-1, 0204-1, 0205-1, 0205-2, 0206-1, 0208-1, 0213-1, 0214-1, 0215-1, 0215-2, 0216-1, 0217-1, 0218-1, 0220-1, 0220-2, 0221-1, 0222-1, 0223-1, 0224-2, 0225-4, 0226-1, 0227-2, 0228-1, 0228-4, 0229-1, 0229-3, 0230-1, 0231-1, 0232-1, 0233-1, 0234-1, 0235-1, 0235-2, 0236-1, 0238-4, 0239-2, 0240-2, 0241-1, 0242-2, 0244-1, 0247-1, 0248-2, 0249-2, 0250-1, 0252-2, 0253-1, 0254-1, 0255-1, 0255-4, 0256-3, 0257-1, 0258-1, 0259-1, 0260-1, 0261-1, 0261-3, 0271-2, 0277-1, 0279-1, 0282-1, 0282-5, 0284-1, 0289-3, 0291-1, 0291-2, 0291-3, 0296-2, 0301-1, 0304-1, 0002-9, 0049-4, 0053-4, 0079-4, 0079-5, 0099-9, 0108-1, 0192-2, 0207-1, 0220-1, 0261-4, 0296-1, 0043-1, 0059-1, 0064-1, 0111-2, 0122-1, 0135-5, 0139-1, 0140-1, 0141-1, 0142-1, 0148-2, 0190-3, 0204-1, 0218-2, 0220-1, 0226-1, 0247-1, 0249-2, 0003-1, 0072-1, 0076-1, 0092-1, 0096-1, 0181-1, 0182-5, 0200-1, 0224-3, 0271-3, 0345-2, 0349-2, 0352-1, 0352-2, 0356-1, 0358-2, 0359-1, 0361-1, 0362-1, 0363-1, 0364-1, 0366-1, 0367-1, 0370-1, 0372-1, 0374-1, 0375-1, 0376-1, 0378-1, 0355-2, 0358-1, 0349-1, 0355-3, 0344-1, 0356-2, 0357-1, 0377-1, 0355-1, 0370-2, 0365-1, 0383-1, 0384-1, 0385-1, 0386-1, 0387-1, 0388-1, 0389-1, 0390-1, 0392-1, 0393-1, 0394-1, 0396-1, 0398-1, 0399-1, 0400-1, 0401-1, 0405-1, 0408-1, 0409-1, 0412-1, 0413-1, 0415-1, 0423-1, 0429-1, 0430-1, 0432-1, 0345-1, 0395-1, 0425-2

**Comment Summary 7:** Many commenters feel strongly that the Aliso Canyon Gas Storage Facility should be shut down. Commenters complain that the Root Cause Analysis (RCA) has not been completed; seismic issues threaten the facility; they allege that SoCalGas does not comply with the law and claim its parent company has a problematic track record as well; many wells lack subsurface safety valves; the long-term health impacts of the facility operating are not known, and the safety review does not require a health study; the facility is not necessary to meet energy reliability needs; the facility is a fire hazard; the facility degrades air quality and threatens the climate; the facility is too close to residences and schools, which can be impacted from many miles away; there is no technology or other measure that can ensure the health and safety of the public and environment; the facility is too old and deteriorated to keep open; pets have been sick or died; and many residents near the facility are experiencing or have experienced headaches, nosebleeds, dizziness, nausea, aggravated asthmatic conditions, cancer, and multiple other health ailments that they attribute to the gas leak or general operation of the Aliso Canyon Gas Storage Facility.

***Response 7:** Consistent with [SB 380](#), the purpose of the public meeting and the comment period was to provide members of the public an opportunity to comment on the [safety review findings](#) and the [proposed minimum and maximum reservoir pressure](#) at the gas storage facility. Many of these comments are not germane to these purposes.*

*DOGGR has conducted a comprehensive safety review to ensure that the Aliso Canyon Gas Storage Facility can be operated safely. Beyond the rigorous mechanical integrity regime imposed on all of the gas storage wells facility, DOGGR and CPUC gave SoCalGas a checklist of [23 specific safety assurance tasks](#) to be completed before resumption of injection would be allowed. The checklist of safety assurance tasks included requirements for work plans, inspections, reports, and data addressing a wide range of issues to ensure that the safety of the Aliso Canyon Gas Storage Facility has been demonstrated.*

*A team, comprised of DOGGR, the CPUC, and CARB, conducted a three-day, on-site Technical Safety Compliance Inspection and evaluated all aspects of the work completed under the checklist to ensure that each task was conducted thoroughly and to verify the outcomes. DOGGR and the CPUC are*

satisfied that the safety of the Aliso Canyon Storage Facility has been demonstrated and verified for the wells, internal pipelines, and compressor station.

These comments express a general desire to see the Aliso Canyon Gas Storage Facility prevented from resuming operations on a permanent or temporary basis. The question of the future of the Aliso Canyon Gas Storage Facility as part of Southern California's energy infrastructure is being considered in a separate proceeding by the CPUC. The first Public Participation Hearing on this matter was conducted by the CPUC on April 17, 2017. More information on this can be found at: <http://www.cpuc.ca.gov/aliso/>.

For a response related to energy reliability, please see **Responses 1 & 2** as well as the addendum from the CPUC, which includes responses from CPUC staff at the end of this document.

For a response related to the RCA, please see **Response 10**.

For a response related to health and air quality impacts, please see **Response 13**.

For a response related to seismic issues, please see **Response 16**.

For a response related to Subsurface Safety Valves, please see **Response 31**.

#### **Aliso Canyon Gas Storage Facility's Location is not Compatible with Nearby Land Uses**

0007-1, 0010-1, 0015-4, 0033-1, 0051-1, 0062-1, 0064-1, 0095-1, 0098-1, 0122-2, 0122-4, 0123-2, 0135-2, 0143-1, 0174-1, 0187-1, 0261-3, 0261-5, 0282-3

**Comment Summary 8:** The homes closest to the facility (north of Sesnon between Tampa and Aliso Canyon) were built in 1966, before this facility was converted to natural gas storage. The facility never should have been allowed to be placed where it endangered those homes. Homes that were sold between then and 2015 did not come with disclosures of the danger of this facility, even though they did have disclosures with a long list of hazards such as the Sunshine Canyon landfill and the Santa Susana Field Laboratory. Some Porter Ranch residents feel an urgency to move, but cannot afford to move. Home values near the Aliso facility have decreased, selling homes in Porter Ranch is too challenging, and people are no longer able to enjoy their properties. SoCalGas should help residents relocate.

**Response 8:** Consistent with [SB 380](#), the purpose of the public meeting and the comment period was to provide members of the public an opportunity to comment on the [safety review findings](#) and the [proposed minimum and maximum reservoir pressure](#) at the Aliso Canyon Gas Storage Facility. Many of these comments contain elements that are not germane to the purpose of the SB 380 public meeting.

Comments pertaining to the appropriateness of land use decisions at or around the Aliso Canyon facility should be directed at local lead agencies making the land use decisions. In terms of evaluating whether or not the facility should exist, pursuant to [SB 380](#), the CPUC has opened a proceeding to determine the feasibility of minimizing or eliminating use of the Aliso Canyon Gas Storage Facility. This process is under way. For information about this proceeding, please visit: <http://www.cpuc.ca.gov/aliso/>.

*Real estate transaction disclosures are not within the purview of DOGGR or the CPUC and would likely need to be addressed by changes to local ordinances, State, or federal law.*

*DOGGR's safety review and pressure limit, as well as other regulatory requirements, are intended to ensure that any risks associated with operating the Aliso Canyon Gas Storage Facility are minimized.*

### **General Safety of Aliso Canyon Gas Storage Facility**

0106-2, 0108-1, 0113-2, 0118-2, 0119-2, 0121-2, 0122-3, 0123-3, 0127-2, 0129-1, 0131-2, 0133-2, 0135-4, 0136-2, 0140-1, 0143-2, 0145-1, 0146-2, 0147-4, 0149-2, 0228-2, 0228-6, 0235-3, 0242-3, 0249-3, 0254-3, 0255-3, 0261-3, 0296-1

**Comment Summary 9:** Many commenters feel strongly that the Aliso Canyon Gas Storage Facility is not safe and that it is dangerous to have this much gas so close to residents. Comments argue that according to the United States Environmental Protection Agency (US EPA), during normal operations, the Aliso Canyon Gas Storage Facility is the third most polluting gas storage facility in the U.S. Comments maintain that the facility poses a major threat to neighboring residents. Comments also claim that even when the facility was closed, there were leaks, methane spikes, odors, and potentially other chemical releases. No release, whether accidental or intentional, is safe or acceptable. They state that in the years before the gas leak, there were at least one to two nosebleeds every day at Castle Bay Elementary. Comments also say that over half of the SoCalGas wells are over 58 years old, the average age is 52 years old, and a negative well integrity trend seems to have developed since 2008. Comments state the belief that there will be another leak, it is not an if, but a when. Mother Nature, human error, or material failure ensures another blow-out will occur.

**Response 9:** *Ensuring the safety of the Aliso Canyon Gas Storage Facility to prevent leaks from occurring is the primary concern of DOGGR. The safety review, new performance standards restricting injection and withdrawal to tubing and packer, monitoring, and testing requirements are all designed to ensure the mechanical integrity of the wells, mitigate risks, and provide for the safe operation at the facility. The safety review does not directly assess public health impacts from exposure to methane or other constituents in natural gas. Rather, the purpose of the new operating requirements and safety review is to prevent leaks of natural gas before they occur in order to avoid public health impacts in the first place. The comments offered do not specifically explain how the comprehensive safety review and testing protocol was or would be inadequate to the task of rendering a well or wells safe to return to injection and withdrawal operations.*

*As mentioned in previous responses, in the aftermath of the blow-out, DOGGR's State Oil and Gas Supervisor issued [Order No. 1109](#) to SoCalGas in order to ensure well integrity. This represents a robust mechanical integrity testing regime that is designed to detect leaks, identify corrosion before leaks occur, identify flaws and defects prior to leaks, ensure that the casing is adequately bonded to the cement, and physically test the well to ensure it can withstand pressures that exceed those that it will be exposed to under normal operating conditions. Order No. 1109 required SoCalGas to perform initial casing assessments (Battery 1) on each well in the facility consisting of both temperature and noise logs, with the results of both logs subject to review by DOGGR engineers. Based on the findings, SoCalGas was required to conduct further investigations, remediate specified wells, or take wells out of service to the satisfaction of DOGGR. If the temperature and noise logs indicate well integrity, and the operator intended to return the well to injection operations, a series of additional tests were performed (Battery 2). These tests included casing inspection logs, cement bond logs, magnetic flux tool, multi-arm caliper inspections, and pressure tests. All of the test results are*

posted online [here](#). Along with the test results, DOGGR created a [video](#) explaining the comprehensive safety review that includes demonstrations and explanations to help members of the public interpret the test results.

For more discussion of risk management, see **Response 15**.

For a more detailed response related to health and air quality impacts, please see **Response 13**.

For a detailed response on seismic risks that may respond to concerns about risks associated with “mother nature,” see **Response 16**.

For a more detailed response related to monitoring and leak detection, please see **Response 25**.

### **Root Cause Analysis (RCA)**

0001-1, 0001-2, 0020-6, 0110-1, 0199-1, 0338-1, 0271-01, 0283-2, 0289-20339-2, 0340-4, 0346-1, 0347-1, 0351-1, 0417-1, 0418-1, 0419-1, 0420-3, 0421-1, 0422-2, 0424-1

**Comment Summary 10:** The Los Angeles County Fire Department, Los Angeles County Department of Public Health, Los Angeles County Board of Supervisors, and many citizens wrote comments requesting that the RCA be completed prior to allowing injections to resume at the Aliso Canyon Gas Storage Facility. The Los Angeles County Fire Department further requests that improvements be incorporated to the Risk Management Plan (RMP) based on the RCA before allowing injections to resume. Some comments also argued that by declaring the safety review complete prior to the completion of the RCA, DOGGR would not be in compliance with SB 380. Additionally, comments pointed out that there is currently pending legislation (SB 57) that would prevent DOGGR from lifting the prohibition on gas injection until after the root cause investigation has been completed and released to the public.

**Response 10:** *Completion of the RCA is not necessary to complete the comprehensive safety review or to meet the requirements of [SB 380](#). Under SB 380, the State Oil and Gas Supervisor may allow injections to resume after the comprehensive safety review is complete, DOGGR holds a public meeting, the Supervisor approves the maximum and minimum reservoir pressures for the Aliso Canyon Gas Storage Facility and determines that the facility is safe to operate, and CPUC concurs with that determination. The Legislature is considering Senate Bill 57 (Stern and Hertzberg) to continue the moratorium on injection at the Aliso Canyon Gas Storage Facility until the RCA is complete. This is a further indication that SB 380 does not require completion of the RCA. That is, the presence of a proposed statutory change pending before the Legislature now – a change that would require completion of the RCA before injection resumes – suggests that the Legislature did not mean to require the RCA in previous legislation, specifically SB 380.*

*Review and interpretation of temperature and noise surveys conducted during the early stages of the SS25 leak and more recent surveys indicate the presence of an anomaly in the underground formation near the SS25 well casing. This means that the leak was likely caused by a breach in the SS25 production casing wall. The RCA may determine the specific cause of the breach in the production casing that led to the leak. Among the possible causes are faulty installation, a failed coupling, a manufacturing defect, excessive wear from well work, and corrosion. These and other potential causes have been considered in the design of the comprehensive safety review and the testing and monitoring program for the other wells at the Aliso Canyon Gas Storage Facility that are*

*intended to return to service. The testing protocol was designed in consultation with experts from the Lawrence Berkeley, Lawrence Livermore, and Sandia National Laboratories (collectively, "National Labs") to ensure that the integrity of the primary and secondary containment barriers are evaluated. Those wells that are intended to return to service have been tested for potential defects and breaches of the sort that may have caused the leak at SS25, and none have been detected.*

*It is also important to note that under DOGGR's new requirements, no well will be allowed to operate as SS25 was operated at the time of the leak. Under DOGGR's prior regulations, the wells were only required to have one annual test that simply looked for the presence or absence of a leak. As described in **Responses 9 and 11**, the present testing regime not only looks for leaks, but it also looks for signs of threats that may cause a leak.*

*In addition to the new testing requirements, the operation of the wells will also be substantially improved from a safety standpoint. This means that while the results of the RCA may be valuable in understanding the cause of the problem at that well at that time, they will be of lesser value in predicting the presence of potential future problems at wells, if any, that are allowed to resume operation. For instance, the practice of injecting gas through both the inner steel pipe (production tubing) and the steel pipe encasing the tubing (production casing) will no longer be allowed. The injection and withdrawal system has been redesigned and overhauled with a primary containment system in a tubing and packer assembly and the production casing as secondary containment system for all wells that will be used for injection and withdrawal of reservoir gas. When the production casing in the SS25 well was breached, regulations did not require a primary and secondary containment system that established an enhanced safety system.*

*The primary containment system is the production tubing, which is all newly installed steel pipe that was inspected before installation. This pipe has an internal burst rating of over 7,000 pounds per square inch (psi) and during injection and withdrawal operations will be exposed to less than 3,000 psi. This difference between pipe strength and the operating pressure provides a significant safety factor.*

*The secondary containment system is the production casing, a steel pipe cemented in place in the well. The production casing will operate at minimum pressures (less than 500 psi), but was tested in place in the well to 3,625 psi during the Battery 2 tests of the safety review. The difference between the test pressure and operating pressure provides a significant safety factor and, in the unlikely case of a failure in the primary containment system, the secondary containment system can withstand the operating pressure. The testing in Battery 2 of the Safety Review was designed to proactively detect any potential breach on the inside and outside of the production casing, which is the secondary containment. As mentioned above, the mechanical integrity testing required when the SS25 well failed was designed to detect a leak, but did not predict a leak before it occurred. Now, inspection and rigorous testing using magnetic, ultrasonic, and mechanical technologies designed to identify any metal loss that would reduce the strength of the pipe before a leak would occur and allow time to react and remediate potential leaks.*

*After the tubing is installed, the casing, tubing, and packer are all pressure tested with fluid in the well to ensure the primary and secondary containment systems are isolated. This is also a verification that down-hole devices are closed and will withstand operating pressure. This updated system is continuously monitored in the operations center by telemetry that reports pressure readings every two minutes. For additional safety, gas storage well heads and the immediate 100*

*feet surrounding the well-site must be inspected daily using gas leak detection technology such as infrared imaging. Finally, all wells at the Aliso Canyon Storage Facility now contain well control lines that permit operators at the facility's operation center to inject well control fluid should it become necessary for any safety reason, including a leak or change in pressure.*

*Although the fundamental cause of the breach in the SS25 production casing is yet to be determined, the redundancy of a primary and secondary containment system that are operating with significant safety margins, the ongoing testing regime, continuous monitoring of pressures at the operations center, daily inspections for methane emissions at the well site, production system reconfiguration with tubing-only injection and withdrawal requirements, and a substantially lower operating pressure all add additional layers of operational safety that did not exist when the blowout occurred. These additional safety measures help ensure that the Aliso Canyon Gas Storage Facility can be operated safely while the RCA is ongoing.*

### **Testing Requirements**

0002-1, 0020-3, 0049-1, 0053-1, 0079-1, 0099-1, 0175-1, 0228-5, 0235-1, 0238-2, 0241-2, 0244-2, 0248-1, 0251-2, 0254-3, 0255-2, 0259-2, 0254-4

**Comment Summary 11:** Comments state that tests conducted on the wells at the Aliso Canyon Gas Storage Facility fall far short of securing and ensuring the safety and integrity of the wells against another blowout. They argue tests do not have any ability to detect a hairline fracture or a corrosion pit in the casing, especially if the fracture or pit does not propagate the full thickness of the casing wall. The casings of the wells have gone through decades of earth movement, as well as the reckless practice of withdrawing gas through the annular space between the casing and the tubing over decades of operation. In addition, the comments continue that tests did not estimate or measure how much seismic activity each well could withstand. Comments say there needs to be much more information about the 79 wells that have not yet passed the battery of tests and were taken out of operation and isolated. Comments state that so many wells failing the battery of tests indicates that the facility should be decommissioned. The RCA should be able to determine whether there are these types of stresses in the casing and should be completed before the wells are used for injection or withdrawal.

**Response 11:** *The comprehensive safety review includes an extensive series of inspections and tests that are designed to ensure that public safety and environmental protection standards are achieved before the State decides whether to allow SoCalGas to use any of its wells to inject natural gas into the storage field. The comprehensive safety review incorporates elements of three different state directives stemming from the leak: Governor Brown's [emergency proclamation](#) of January 6, 2016; [SB 380](#); and DOGGR's [Order No. 1109](#). The main element of that safety review is a rigorous battery of tests that incorporate some of the best practices and technologies available. DOGGR's most experienced engineers and geologists collaborated with independent experts from the National Labs to design the review and testing regime.*

*For a well to be approved to return to service, SoCalGas was required to conduct a series of six rigorous diagnostic tests, which were divided into two batteries. Using the best available technology, Battery 1 and Battery 2 include pressure tests, magnetic, ultrasonic, and mechanical tests that can detect metal loss, such as corrosion pits, and defects, or reductions in wall thickness inside and outside the casing. Those testing results were reviewed and validated by DOGGR engineers and have been [posted online](#) enabling public review and scrutiny. The testing protocols use the best available technologies, but may not detect hairline cracks. Neither DOGGR nor*

*independent experts from the National Labs are aware of any technology that could. The positive pressure tests are intended to reveal structural weaknesses that would not otherwise be detected using current technologies.*

*Battery 1 consists of noise and temperature logs and is essentially an initial diagnostic. The temperature log is run from the top of the well to the bottom of the well, and searches for temperature anomalies. The noise log is run from the bottom of the well to the top of the well and searches for sounds that could result from escaping gas. These logs are run as a screening criteria to determine very quickly if there are other damaged wells that needed immediate attention. If a well passes Battery 1, it may move to the Battery 2.*

*The first Battery 2 test is a Cement Bond Log (CBL) that uses ultrasonic sound to evaluate the quality and location of cement on the outside of the casing. DOGGR requires at least 100 feet of bonded cement above the gas reservoir for a passing test.*

*The second Battery 2 test is a Multi-Armed Caliper Log that uses the mechanical “arms and fingers” of the caliper to detect any irregularities inside the casing of the well.*

*The third Battery 2 test is an Ultrasonic Casing Inspection Log that uses ultrasonic technology to examine the casing thickness and the cement bond quality, and can detect casing damage on the outside of the pipe. These data can be used to calculate wall thickness and subsequently an equivalent burst rating using a formula called, “Barlow’s equation.”*

*The fourth Battery 2 test is a Magnetic Flux Casing Inspection that uses magnetic flux technology to examine the inside and outside of the casing. This tool is run on wireline after the well has been prepped by a rig, and magnetizes the steel and then measures flux leakage in areas of corrosion or missing metal. This test can also be used to detect damage on the outside of the pipe. The data from this test can also be used to calculate wall thickness and subsequently an equivalent burst rating using the same formula called, “Barlow’s equation.”*

*Another level of testing is done through pressure tests. Production casing and tubing must test to at least 115 percent of the maximum operating pressure, which is 3,625 psi. Tests are for one hour and recorded and witnessed by a DOGGR engineer. A passing pressure test is one that has a change of less than 10 percent for any 30-minute period during the hour-long test.*

*If a well passes all tests, it can be approved for return to service. If a well fails a single test, the operator must decide whether to remediate the well or plug and abandon the well under DOGGR supervision. For instance, if a test indicates casing degradation, the operator could install a metal sleeve inside the casing, with cement between the sleeve and casing. The well would then be required to undergo the tests once again to demonstrate well integrity. Any remediation will be subject to the review of DOGGR’s engineers.*

*Additionally, for wells intended to be taken out of operation and isolated from the formation, the operator is required to confirm the presence of cement outside of the well’s external casing in the section of the well that prevents the movement of gas from the underground gas reservoir to shallower geologic zones above the reservoir. The operator is also required to install a mechanical seal or “packer” within the well casing’s interior and install a mechanical plug within the well’s interior metal tubing, if applicable, and fill the well with fluid to the well’s surface to create*

*appropriate downward pressure in the well that further contributes to the integrity of the well seal. Once these steps have been completed, the operator is required to conduct daily gas monitoring, install real-time pressure monitors, and perform noise and temperature logs every six months. Wells taken out of service must complete the required battery of tests within one year, or face being taken out of service permanently.*

*As mentioned in **Response 7**, beyond the rigorous mechanical integrity regime imposed on all of the gas storage wells facility, DOGGR and CPUC gave SoCalGas a checklist of [23 specific safety assurance tasks](#) to be completed before resumption of injection would be allowed. The checklist of safety assurance tasks included requirements for work plans, inspections, reports, and data addressing a wide range of issues to ensure that the safety of all aspects of the facility has been demonstrated.*

*For a response related to the RCA, please see **Response 10**.*

*For a description of the new operational requirements, please see **Response 6**.*

*For a response to the seismic issues raised, please see **Response 16**.*

#### **Additional Factors DOGGR Should Consider**

0159-1

**Comment Summary 12:** This comment states that DOC and DOGGR should consider the following issues about the gas storage industry ahead of the conclusion of the RCA: the effect of produced sand and the minimum erosion rate on casing/tubing/surface piping over time; whether the abandoned wells meet current standards of abandonment; whether the surface locations of the wells are marked and monitored; what the surface annulus pressures were prior to blowout on the wells of SS25; the circumstances allowing the gas company to remove the sub-surface safety values in gas wells without replacement; the regulations, or lack thereof, around the structural integrity of cement bonds; the age of the gas storage wells and whether DOGGR has the authority to force the operator to replace the wells; what kind of pressure tests SoCalGas used to determine leaks; and the type of data that can be collected by the operator, particularly when it comes to showing shallow leaks and other “damaging” data.

**Response 12:** *In late 2015, both DOGGR and the CPUC began investigations regarding the cause of the leak and, in a joint letter, directed SoCalGas to begin the process of obtaining an outside source to perform a technical RCA on the nature of the failure of well SS25 and the technical cause of the leak. This independent third-party RCA is intended to supplement the investigations of both agencies.*

*DOGGR is focusing its independent investigation on the mechanical and operational condition of the well to determine the cause of the well failure and the subsequent natural gas leak. This entails review of data related to well records and injection project approval. Data being evaluated include: well records from initial drill to well failure; cementing records and cement evaluation data; completion records, such as perforated zones and any well stimulation operations; geophysical and other image logs; records of well tests witnessed by DOGGR staff; mechanical integrity tests; injection profiling, if available; temperature surveys and other diagnostic tools; and production and injection records. Data related to injection project approval include: approved project operating*

*conditions; any limiting factors or restriction in the approval; monitoring of the project performance; supporting geologic and engineering data for project approval; operational review of nearby wells within the project; and review of mechanical integrity tests of nearby wells.*

*The CPUC independent investigation includes an assessment of SoCalGas’s emergency response; design, construction, operations, and maintenance activities of the failed well; SoCalGas management of contractors involved in the Aliso Canyon Gas Storage Facility; actions both preceding and following the blowout; and actions the company took to promote the safety, health, comfort, and convenience of its patrons, employees, and the public at the Aliso Canyon Gas Storage Facility. The CPUC investigation team will review information related to SS25 and more broadly to the Aliso Canyon Gas Storage Facility and adjacent wells. Several pieces of information will be examined, such as the following: Aliso Canyon Gas Storage Facility / SS25 design and construction records; Aliso Canyon Gas Storage Facility / SS25 operations and maintenance records; emergency management / safety practices; review of previous failures, near misses, etc.; interview of witnesses; third-party RCA report; SoCalGas’s procedures; industry best practices, integrity tests, diagnostic tests, surveys, etc.; historical injection and withdrawal records; statements made by SoCalGas since the incident; notifications to nearby residents and government agencies; contracts and field management related to halting the leak; and overall response to public and worker safety since the incident.*

### **Public Health and Safety Concerns**

0006-1, 0007-1, 0010-1, 0021-1, 0025-1, 0033-1, 0046-1, 0102-1, 0103-1, 0108-3, 0119-1, 0132-3, 0166-1, 0172-1, 0177-1, 0184-1, 0192-1, 0208-1, 0215-1, 0219-1, 0220-1, 0220-3, 0224-1, 0224-4, 0225-1, 0227-1, 0228-2, 0228-6, 0229-1, 0235-4, 0239-1, 0240-1, 0242-1, 0242-3, 0249-1, 0252-1, 0253-2, 0254-2, 0255-4, 0256-2, 0258-2, 0260-2, 0261-3, 0261-4, 0277-2, 0279-2, 0280-1, 0282-1, 0289-1, 0290-1, 0291-1, 0291-2, 0301-2, 0425-1, 0001-12, 0020-7, 0157-2, 0178-2, 0182-7, 0188-1, 0238-3, 0241-3, 0242-1, 0339-3, 0339-4, 0350-1, 0421-3, 0428-2

**Comment Summary 13:** Comments describe residents in the vicinity of the Aliso Canyon Gas Storage Facility experiencing numerous adverse health impacts. Symptoms identified in comments provided include: headaches, bronchitis, nausea, skin irritation, dizziness, anxiety, fatigue, depression, cancer, ear and eye itching, skin rashes, sore throat, impaired memory and judgment, nose bleeds, coughing, difficulty urinating, sneezing, hair loss, issues with digestion, constipation, difficulty sleeping, weight loss, brain atrophy, and hyperinflation of the lungs. Comments attribute these symptoms to exposure to gas odors and indicate that in some cases symptoms have left people unable to work. Many comments indicate these symptoms disappear when residents leave the area. Furthermore, comments state that neither the CPUC nor DOGGR have conducted a health investigation as part of their evaluation as to whether or not the facility should be allowed to restart operations. SoCalGas has not had to disclose the chemicals to which nearby residents have been exposed. Comments argue SoCalGas should be required to fund a comprehensive, community health study to the scope and specifications approved by the California Department of Public Health (CDPH), the South Coast Air Quality Management District (South Coast AQMD), and an independent panel of scientific agencies and experts; and DOGGR should routinely “fingerprint” oil mixtures to understand potential impacts on public health.

**Response 13:** *DOGGR understands that many residents have serious concerns about symptoms they are experiencing and have experienced during and following the leak at the Aliso Canyon Gas Storage Facility. Comments are correct that neither DOGGR nor CPUC have conducted a health study related to the leak. However, the purpose of the public meeting as required by [SB 380](#) was to*

provide members of the public an opportunity to comment on the [safety review findings](#) and the [proposed minimum and maximum reservoir pressure](#) at the gas storage facility. DOGGR's safety review and pressure limit, as well as other regulatory requirements, are intended to ensure that any risks associated with operating the facility are evaluated and minimized.

Ensuring the safety of the Aliso Canyon Gas Storage Facility and preventing leaks from occurring is DOGGR's primary concern. The safety review, new performance standards, monitoring, and testing requirements are designed to ensure the mechanical integrity of the wells, mitigate risks, and supervise the safe operation of the facility. The safety review does not directly assess public health impacts from exposure to methane or other constituents in natural gas. Rather, the purpose of the new operating requirements and safety review is to prevent natural gas leaks before they occur in order to avoid public health impacts in the first place.

While outside the scope of the public meetings, many comments expressed concern regarding health impacts or air quality impacts. The Governor issued an [Emergency Proclamation](#) to ensure a thorough State response to the gas leak. As part of the Emergency Proclamation, the Governor ordered the State's Office of Environmental Health Hazard Assessment (OEHHA) to convene an independent panel of scientific and medical experts to review public health concerns stemming from the gas leak and evaluate whether additional measures were needed to protect public health during the period of active well leakage beyond those already put in place. The panel was comprised of eight recognized experts from the University of California system. The panel included experts in medicine, toxicology, epidemiology, and exposure sciences. A summary of the expert advisor input can be found here:

<https://oehha.ca.gov/media/downloads/air/document/alisocynsummaryexpertadvisors02122016n.pdf>.

While there is a consensus among the commenters that more work needs to be done with respect to investigating the health impacts associated with leaking natural gas, DOGGR is not directly involved in such an assessment. Members of the public can find information about the health impacts, analysis, air sampling, and future studies at the following websites:

OEHHA provided an analysis of peak benzene levels in the aftermath of the leak here:

<https://oehha.ca.gov/air/general-info/aliso-canyon-underground-storage-field-los-angeles-county>. General information about OEHHA's prior to and following the February 2016 sealing of the leaking well is available at <https://oehha.ca.gov/air/general-info/aliso-canyon-underground-storage-field-los-angeles-county>.

Information about CARB's analysis of the leak can be found here:

[https://www.arb.ca.gov/research/aliso\\_canyon\\_natural\\_gas\\_leak.htm](https://www.arb.ca.gov/research/aliso_canyon_natural_gas_leak.htm).

Los Angeles County's Department of Public Health continues to work with other regulatory agencies to acquire and review data from the site and community. Los Angeles County Public Health is reviewing plans and data submitted by SoCalGas and is contacting residents who have filed complaints and following up on impacted residents' concerns. More information from the Los Angeles County Public Health Department can be found here:

<http://www.publichealth.lacounty.gov/media/gasleak/>

Finally, as part of a settlement agreement with the South Coast AQMD, SoCalGas has agreed to provide some funding for a study on the health impacts associated with the leak. Information on this is available here: <http://www.aqmd.gov/home/regulations/compliance/aliso-canyon-update>.

0301-4

**Comment Summary 14:** Real-time air monitoring shows elevated levels of methane after SoCalGas applied to begin reinjection, and methane carries benzene, toluene, xylene and many other chemicals that are harmful to human health. During a period of time where elevated methane readings were recorded, many unique health complaints were captured on social media, many during times when the methane readings were spiking.

**Response 14:** *The safety review, new performance standards, monitoring, and testing requirements are designed to ensure the mechanical integrity of the wells, mitigate risks, and supervise the safe operation of the facility, but do not directly assess public health impacts from the leaks. The primary purpose of the new operating requirements and safety review is to prevent leaks before they occur.*

*The Aliso Canyon Gas Storage Facility has several monitoring tools for the detection of any potential leaks, including an infrared fence-line methane monitoring system. This system consists of eight infrared sensors located near or along the southern border of the Aliso Canyon facility. The sensors are monitored 24-hours a day, seven days a week by trained staff. Additionally, SoCalGas was ordered to implement real-time pressure monitoring of all wells and daily scanning of each well using sensitive infrared thermal imaging cameras that can detect leaks.*

*While some minor leaks have occurred, DOGGR has not been made aware of any significant release of methane or other emissions from the Aliso Canyon Gas Storage Facility. Since no significant methane releases have been detected in the last 12 months by the monitoring efforts at the facility, consideration of the cause of any health complaints downwind from the facility should also consider causes unrelated to the gas storage facility. Individuals who detect or are otherwise made aware of prohibited emissions or leaks can report them to the South Coast AQMD. Information about how to register a complaint can be found here: <http://www.aqmd.gov/contact/complaints>.*

*For additional links to information about air quality and health related information, please see **Response 13.***

### **Comprehensive Safety Review**

0001-5, 0001-11, 0205-2, 0210-1, 0301-3, 0339-1, 0339-3

**Comment Summary 15:** The comprehensive safety review is inadequate because it doesn't consider many public health risk factors, including geologic factors (e.g., seismic activity), potential for human error, and severe weather events; does not adequately address the need for continuous, comprehensive air monitoring for the complex network of wells, pipelines and, related infrastructure; and does not identify the chemical composition of the natural gas in the wells or reservoir.

**Response 15:**

*The comprehensive safety review is one important element of DOGGR's risk-based approach to overseeing operations at the Aliso Canyon Gas Storage Facility. Consideration of seismicity and other geologic factors, severe weather, and human error is covered by both the Emergency Response Plan and the Risk Management Plan (RMP). The mechanical integrity testing regime, real-time*

monitoring, required inspections, and new operational requirements are designed to ensure the safe operation of the natural gas storage facility.

Every well head is examined daily with a sensitive infrared camera for leaks, the South Coast AQMD has required fence line monitoring for leaked gas adjacent to the Porter Ranch Community, and the safety review requires “complete leak surveys for the entire facility immediately after one month of injection operations and quarterly thereafter for one year (five surveys total), with results reported to CPUUC and CARB within seven days of completion. After the first year, leak surveys must be completed in line with applicable CARB regulations.”

For a response related to seismic issues, please see **Response 16**.

### **Seismic Issues / Seismic Studies**

0001-4, 0001-7, 0002-3, 0002-4, 0020-4, 0023-1, 0049-2, 0053-2, 0079-2, 0099-3, 0099-4, 0123-5, 0205-3, 0228-4, 0229-2, 0254-5, 0255-6, 0259-1, 0270-1, 0272-1, 0282-4, 0283-1, 0297-1, 0292-1, 0301-6, 0338-3, 0338-4, 0340-3, 0002-2, 0099-2, 0023-3, 0420-2

**Comment Summary 16:** Comments stated that geologic, geotechnical, and seismic hazard investigations, seismic studies, and a full evaluation of seismic risks recommended by the National Labs and the Los Angeles County Fire Department should be completed prior to allowing SoCalGas to inject more gas into the Aliso Canyon Gas Storage Facility. Seismic hazards that should be further studied and mitigated are those identified in comments to DOGGR made by Cal State Northridge Geology Professor Matthew d’Alessio. A large enough seismic event could trigger a catastrophic event that could result in the failure of both tubing and casing and therefore the liquid located in the annular space would not be sufficient to stop a blowout identical to SS25.

**Response 16:** DOGGR also believes that earthquake risks should be studied, evaluated, and mitigated to the maximum extent possible. During the last notable seismic event in the region, the 1994 Northridge 6.7 magnitude earthquake, the Aliso Canyon Gas Storage Facility was impacted. Along with a buckled and split high-pressure pipeline, damage included deformation of pipe supports, displaced gas injection and withdrawal lines, structural damage to a large compressor fan unit, and damage to oil and water tanks. According to a [report](#) by the California Geological Survey issued following the quake, the underground storage field itself was undamaged. Only one of the wells that was active at the time, Standard Sesnon 4-0, experienced a collapsed casing in a section above the gas storage zone. The damaged well was repaired by a work-over rig under a permit issued by DOGGR, and SoCalGas placed abandonment cement below the collapse and into the storage zone. Upon recovery of the casing, it was determined that the collapsed casing had sealed the well. The well was later plugged and abandoned. Due to the damage sustained at the facility, it was out of operation for a total of five days.

[SB 380](#) does not require a seismic study, but DOGGR agrees that additional research on seismic risk must be conducted and has requested assistance from the National Labs to oversee seismic risk studies to include a Probabilistic Seismic Hazards Analysis (PSHA) and a Probabilistic Fault Displacement Analysis (PFDA), and an evaluation of mitigation measures. While the effect of seismic events on the surface (i.e. structures and roadways) are relatively well understood by the scientific and engineering community, few, if any, significant impacts from seismic events in natural gas fields have been recorded, witnessed, or studied. As noted above, following the Northridge earthquake the

*gas storage reservoir remained intact and damage to wells was relatively minor compared to other impacts seen across the basin from the Northridge earthquake.*

*Further, as SB 380 requires, DOGGR ensured that the risks of failures identified during the comprehensive safety review were addressed. As a result of that review, SoCalGas temporarily or permanently plugged several wells and isolated them from the reservoir. As part of its RMP, SoCalGas must begin to study further the seismic risks as recommended by the National Labs. While the studies are being completed, significant mitigation measures that were not in place during the Northridge earthquake such as surface safety valves, new tubing and packer assemblies, continuous pressure monitoring, and well control systems on every well pad have reduced the potential impact of a seismic event, should one occur. Additionally, isolating the well from the gas storage reservoir through the use of a packer and fluid is consistent with SB 887 and Order No. 1109.*

*DOGGR concurs with the National Labs' position that "we do not believe the recommended detailed seismic studies require immediate action, but they should be planned and executed in a deliberate manner." These studies may take a year to complete and peer review. The Aliso Canyon Gas Storage facility previously withstood a significant seismic event without significant damage and now has substantially more safety precautions in place than when the Northridge earthquake occurred. Further study into risks and appropriate mitigations for seismic events are certainly warranted and should be conducted as soon as practicable. However, given that the facility endured a previous seismic event without significant impacts to public health and safety and now has more safety mitigations in place, DOGGR does not believe it is necessary to prohibit the resumption of injection until the seismic studies are complete.*

*SoCalGas will bear the cost of the studies, which will be conducted by a third-party consultant approved by DOGGR and the National Labs. The studies will strengthen the understanding of the risk and impact of seismic hazards at the Aliso Canyon Gas Storage Facility and will be completed in six stages over approximately a one-year period.*

*The first stage of the seismic study will be a refinement of a three-dimension petrophysical model to further identify traps, cap rock, faults, unconformities, and other geologic features. The second stage will investigate potential leak rates in the reservoir. The third stage will investigate geologic units above the reservoir for leakage and sealing potential. The fourth and fifth stages will define parameters for the modeling efforts and conduct of the probabilistic seismic hazard analysis and probabilistic fault displacement analysis. The final stage will analyze potential fault displacement, the likelihood of a seismic event, and the impact of the seismic event. The final stage will investigate, develop, and recommend mitigation steps.*

*The proposed studies will go beyond what the Los Angeles County Fire Department recommends with new research in structural seismic damage to subsurface wells and mitigation measures. This research will be conducted by a third-party contractor acknowledged by the National Labs as having the subject matter expertise and intellectual integrity to complete the research. Currently, there is little scientific evidence to substantiate the likelihood and impact of a seismic event on natural gas wells. The National Labs, in conjunction with DOGGR, SoCalGas, third-party subject matter experts, and other interested parties, will endeavor to fully understand the risks and develop the appropriate mitigation measures.*

## **Risk Management Plans and Emergency Response Planning**

001-6

**Comment Summary 17:** SoCalGas is not in compliance with [Order No. 1109](#) because the RMP does not effectively mitigate geologic and geotechnical hazards.

**Response 17:** *SoCalGas satisfied the requirement in [Order No. 1109](#) to include an effective facility-wide response plan and effective geologic and geotechnical hazard mitigation protocols in the RMP filed under California Code of Regulations, title 14, section 1724.9, subdivision (g). DOGGR carefully considered all data submitted by SoCalGas and followed up with SoCalGas as necessary to collect additional data to ensure that the RMP would be complete according to the mandates of Order No. 1109 and the regulation. Further, DOGGR consulted with the National Labs regarding potential geologic and geotechnical hazards that may affect the Aliso Canyon Gas Storage Facility. The National Labs recommended that two studies be conducted to provide a more detailed understanding of the seismic hazards at the facility. The National Labs concluded that they “do not believe that the recommended detailed seismic studies require immediate action, but they should be planned and executed in a deliberate manner.” As a result, DOGGR conditioned approval of the RMP on additional study in conjunction with the National Labs to evaluate seismic risk mitigation measures beginning in 2017.*

*Seismic risks are discussed in **response 16**.*

0001-8, 0290-1, 0292-1, 0338-5, 0338-6, 0420-1, 0347-2

**Comment Summary 18:** Comments alleged the RMP is inadequate, does not mention the incident at the Aliso Canyon Gas Storage Facility, has not been updated since the October 23, 2015, leak at the Aliso Canyon Gas Storage Facility, does not comply with applicable risk management requirements, is written too broadly, was prepared without having completed an RCA or the seismic studies recommended by the National Labs, and does not comply with DOGGR’s “Checklist of Pre-Injection Safety Assurances (Checklist).” Prior to resuming injection, SoCalGas should conduct further studies, incorporate further mitigations, make many improvements to the RMP and include site-specific information, and update other emergency planning documents on DOGGR’s website.

**Response 18:** *While the emergency regulations do not require that the RMP be specific to the Aliso Canyon Gas Storage Facility, the proposed [permanent regulations](#), do require that RMPs be specific to each gas storage project. Further, completion of the RCA or seismic studies recommended by the National Labs is not required for the RMP to be complete. What is critical is that the RMP for the Aliso Canyon Gas Storage Facility include the information required by regulations section 1724.9, subdivision (g), Public Resources Code section 3181, and [Order No. 1109](#), which are reflected in the October Checklist. The RMP satisfies those requirements. As is the case with RMPs generally, new information may spark revisions to the RMP. Not having that information does not make the RMP deficient.*

*The RMP complies with the October 2016 Checklist. In evaluating compliance with the Checklist, DOGGR found that the RMP is complete on the condition that in 2017, SoCalGas begin to study further the seismic risks as recommended by the National Labs. See **Responses 16 and 17** for additional discussion of the RMP, emergency response plan, and seismic risks.*

0001-9, 0338-5, 0338-6

**Comment Summary 19:** Commenters believe that many documents and data required under the regulations and/or related to the RMP have either not been completed or have not been made available to the public, including the Emergency Response Plan. The baseline assessment inspection of wells related to the RMP should be completed prior to allowing gas injection to begin.

**Response 19:** [SB 380](#) requires DOGGR, with respect to the comprehensive safety review at the Aliso Canyon Gas Storage Facility, to post online for the public all testing, inspection, and monitoring results reported to DOGGR, gas storage well compliance status, any required remediation steps, and other safety review-related materials. DOGGR has posted and continues to post those and other Aliso-related documents and data on the public website. Documents and data to which the comment referred are on the public website, which can be accessed via:

<http://www.conservation.ca.gov/dog/AlisoCanyon/Pages/AlisoCanyon-SoCalGas-AttachmentB.aspx>

The emergency response plan and associate documents can be found here:

<http://www.conservation.ca.gov/dog/AlisoCanyon/Pages/AlisoCanyon-SoCalGas-AttachmentB.aspx>.

0340-1

**Comment Summary 20:** The comment states the belief that the Risk Management Plan does not adequately consider wellhead threats along with related prevention and mitigation measures. As a primary component in the tubing-only gas flow system adopted by SoCalGas, wellheads should be included within the Underground Storage Asset Categories detailed in the RMP.

**Response 20:** DOGGR believes that both wellhead threats and mitigation measures are adequately considered within the RMP. For additional information on wellhead risk mitigation, see **Responses 31 and 35**. The next version of the RMP will be focused solely on the Aliso Canyon Gas Storage Facility and formatted differently than the version received to date, as amended.

0001-10, 0338-6

**Comment Summary 21:** SoCalGas has not consulted with the fire department on the Emergency Response Plan, contrary to the requirements of SB 887 (codified at Public Resources Code section 3181), nor does the RMP satisfy the requirements of SB 887.

**Response 21:** The purpose of the public meeting as required by [SB 380](#) was to provide members of the public an opportunity to comment on the [safety review findings](#) and the [proposed minimum and maximum reservoir pressure](#) at the Aliso Canyon Gas Storage Facility. DOGGR's safety review and pressure limit, as well as other regulatory requirements, are intended to ensure that any risks associated with operating the facility are evaluated and minimized.

The comment is correct that SB 887 requires operators to consult with local emergency response entities on the operator's emergency response plan, and DOGGR continues to work with SoCalGas and Los Angeles County to facilitate communication on the emergency response plan. As previously indicated, the requirements for an RMP that includes an emergency response plan are new requirements, and updates and improvements are anticipated prior to, and even after, DOGGR approves the RMP. Input from local emergency response entities to both the operator and DOGGR are most welcome and will be strongly considered as the plans are revised and evaluated. However, completion of the iterative process to enhance the emergency response plan is not required for resumption of injection at the Aliso Canyon Gas Storage Facility.

## **Maximum Field Pressure**

0002-5, 0099-5

**Comment Summary 22:** The report completed by GeoMechanics Technologies is flawed because it relied on information from injection tests conducted in the past and did not do a single test of any sample of the cap rock, or any numerical modeling of the stresses under various field gas storage volumes and repeated injection and withdrawal that has happened over the decades. It is troubling that the single entity that did the study was paid by SoCalGas to do it, did not have a single sample of anything to work with, and then put a disclaimer to disavow themselves from anything that comes out of their analysis and refuse to stand behind the accuracy, completeness, and usefulness of anything they have in their report. It is also disappointing that the National Labs followed the same rationale and concurred with the same number without any further analysis and completely ignoring the risk analysis component to the decision.

***Response 22:** DOGGR posted the GeoMechanics Technologies study as a matter of public transparency, but did not rely on the study to determine the recommended maximum reservoir pressure. The GeoMechanics Technology study recommended a maximum reservoir pressure of 3,600 psi, SoCalGas requested 3,595 psi, and DOGGR recommended a maximum reservoir pressure of 2,926 psi, which is 674 psi lower than what GeoMechanics recommended and 669 psi lower than what SoCalGas requested.*

*In addition to consulting with the National Labs' geotechnical experts, DOGGR consulted with Dr. Richard A. Schultz regarding the proposed minimum and maximum reservoir pressures at the Aliso Canyon Gas Storage Facility. Dr. Shultz is a professor at the University of Texas at Austin who specializes in overburden and geomechanics. Dr. Shultz also concurred with the National Labs and the request from SoCalGas, finding that the requested maximum operating pressure of 3,595 psi and minimum operating pressure of 1,080 psi are within normal operating parameters and should be considered for approval.*

*Although the independent experts consulted by DOGGR believe that a maximum reservoir pressure of 3,595 psi and a minimum reservoir pressure of 1,080 psi is prudent, DOGGR recommended that a more conservative, lower maximum pressure should be approved.*

0002-6, 0022-1, 0049-3, 0053-3, 0064-2, 0099-6

**Comment Summary 23:** The GeoMechanics Technologies report is too one-dimensional. It focuses too much on the typical engineering approach and the fracture gradient calculation. The report needs to address the "cost of being wrong" and include a risk analysis component that assesses the impact of failure on the surrounding community.

***Response 23:** DOGGR posted the GeoMechanics Technologies study as a matter of public transparency, but did not use the fracture gradient calculations in any manner. The GeoMechanics Technology study analyzes essential rock properties, and it would be outside of the scope of rock mechanics experts to comment on community impact.*

0002-7, 0079-3, 0099-7

**Comment Summary 24:** The GeoMechanics Technologies report suggests that wells at the Aliso Canyon Gas Storage Facility can be operated at the same maximum pressure under which they were operated before the well blowout. It is unclear why DOGGR finds this to be acceptable.

**Response 24:** *DOGGR did not accept GeoMechanics Technologies recommendation. DOGGR posted the GeoMechanics Technologies study as a matter of public transparency, but did not rely on the study to determine the recommended maximum reservoir pressure. The GeoMechanics Technology study recommended a maximum reservoir pressure of 3,600 psi, SoCalGas requested 3,595 psi, and DOGGR recommended a maximum reservoir pressure of 2,926 psi, which is 674 psi lower than what GeoMechanics recommended and 669 psi lower than what SoCalGas requested.*

### **Leak Detection**

0197-1, 0421-2

**Comment Summary 25:** For the safe operation of the Aliso Canyon Gas Storage Facility, the gas detection process must be automated and involve continuous monitoring of the well bores from the surface to the bottom using some the most modern sensor technology to identify temperature changes, noise levels, breaches and breach location, seismic activity sensors, and any fault or subsidence related strain of the casing as well as any seismic imaging program.

**Response 25:** *SoCalGas currently implements a variety of monitoring tools for the detection of any potential leaks, including an infrared fence-line methane monitoring system. This system, which consists of eight infrared sensors located near or along the southern border of the Aliso Canyon Gas Storage Facility. The sensors are monitored 24-hours a day, seven days a week by trained staff. Additionally, SoCalGas implements 24-hour pressure monitoring of all wells, daily patrols to examine every well daily, and daily scanning of each well using sensitive infrared thermal imaging cameras that can detect leaks. This updated system is continuously monitored in the operations center by telemetry that reports pressure readings from the wells every two minutes.*

### **Well Stimulation**

0002-8, 0099-8, 0205-4, 0218-1

**Comment Summary 26:** Past and ongoing fracking at the Aliso Canyon Gas Storage Facility must be considered as a potential impact on the cap rock and overlaying ground cover.

**Response 26:** *DOGGR agrees that all aspects of well operations should be considered for the proper and safe operation of gas storage wells, including well stimulation. Currently, any activities at the Aliso Canyon Gas Storage Facility that would fall under the purview of DOGGR's well stimulation program would be required to comply with the reporting requirements of California Code of Regulations, title 14, section 1777.4. Additionally, California Code of Regulations, title 14, section 1777.4 authorizes DOGGR to impose additional requirements as necessary to fit specific circumstances and types of underground injection projects. In addition to compliance with section 1777.4, SoCalGas must also consult with DOGGR prior to performing specified well stimulation treatments. The consultation will help ensure that the well treatment does not interfere with underground injection operations or pose risks to health, safety, or the environment. It will also allow DOGGR staff an opportunity to witness operations.*

*Any previous hydraulic fracturing attempts, which would be few in number, if any, would not have compromised the integrity of the cap rock. Hydraulic fractures propagate vertically within the fractured zone until the fracture reaches the cap rock, after which the fracture mostly propagates horizontally parallel to the cap rock with only a small amount of fracture penetration into the cap*

rock itself. The cap rock is the overlying shaley Modelo Formation with average thickness of 350 feet. Gas storage operators monitor gas inventory, analyze the evidence from surveys taken in monitoring wells, and analyze ambient leak detection technologies, then take action, if necessary, to eliminate uncontrolled losses of gas from gas leaking through the cap rock or from gas storage wells.

### **SB 380 Compliance**

0001-14

**Comment Summary 27:** The public meetings were premature because not all 114 wells at Aliso Canyon had passed the required tests or been isolated and, therefore, the safety review was not complete prior to the public meeting as SB 380 requires. Los Angeles County requests that DOGGR complete the safety review and reiterates that only after that occurs can the public meeting requirement also be completed.

**Response 27:** [SB 380](#) requires that all wells proposed to be used for injection are comprehensively tested according to a regime developed by DOGGR in consultation with independent experts at the National Labs. The tests must include leak detection, corrosion detection (casing thickness), casing deformity detection, a measurement of the cement bond on the exterior of the casing, and a pressure test to ensure mechanical integrity of the well. Additionally, all wells must be in one of the following categories: the well is not leaking and has passed four additional comprehensive evaluations proving its internal and external integrity; the well is not leaking and has been temporarily plugged and isolated from the gas reservoir; the well is permanently plugged with cement and not leaking. Prior to holding the public meetings, DOGGR verified that all 114 wells were in one of these three categories and issued findings letters indicating these determinations. Note, isolation from the reservoir can be achieved with a bridge plug and engineered fluid in the well or by having a workover rig on the well with a certified Blow Out Preventer (BOP).

*It appears this comment refers to status of well Porter 32 at the time of scheduling the public comment hearing. The Porter 32 well had passed Battery 1 testing, in May 2016 and was isolated from the reservoir. Subsequently, SoCalGas decided they wanted to eventually return this well to service and began the Battery 2 tests. SoCalGas had a rig on location prior to the February 2017 public meetings, and the well was listed on DOGGR's website as "Pending Test Results." While the well had passed Battery 1 and was isolated from the reservoir, the label of "Pending Test Results" may have caused the commenter to believe the well was not in one of the allowable categories under SB 380.*

0001-15, 0301-2, 0301-3, 0340-6, 0340-7

**Comment Summary 28:** DOGGR has not complied with SB 380 because many documents of the safety review are incomplete and subject to future submittals and changes. Data required pursuant to California Code of Regulations, title 14, section 1724.7 should be submitted by SoCalGas to DOGGR prior to any decision to approve gas injection. SoCalGas has not complied with the following October 2016 safety assurance checklist tasks: #11 related to surface casing pressure; #16 related to leak detection protocols, optical gas imaging, and potential changes that CARB may require; and #22 related to data gaps identified by DOGGR in SoCalGas' project file. SB 380 requires DOGGR to post the data and documents on its website and, by not doing so, DOGGR has denied the public its right to comment on the completed safety review.

**Response 28:** The October 2016 Checklist task #11 was updated by SoCalGas during the Technical Safety Compliance Inspection on November 8-10, 2016, in consultation with DOGGR senior inspectors. The updated version of “Aliso Canyon Well Pressure Monitoring Policies and Procedures” revision dated November 17, 2016, can be found on DOGGR’s website under Recent Correspondence – [Attachment B](#) - Checklist #11.

The October 2016 Checklist task #16 was updated by SoCalGas during the Technical Safety Compliance Inspection on November 8-10, 2016, in consultation with CARB staff. The updated version of “Well Inspection and Leak Detection Protocol” revision dated January 24, 2017, can be found on DOGGR’s website under Recent Correspondence – [Attachment B](#) – Checklist# 16.

The October 2016 Checklist task #22 was reviewed during the Technical Safety Compliance Inspection on November 8-10, 2016, in consultation with DOGGR staff. Although Checklist task #22 completion is not required until after injection resumes, all data gaps in the project file were submitted by SoCalGas to DOGGR on February 8, 2017. When DOGGR has completed its assessment of the project data, they will be posted to the project file.

0001-17, 0290-1

**Comment Summary 29:** Comments state that the safety review is not complete and the public has not been provided access to all safety-related documents, the public comment deadline should be extended, or public comment reopened, after the safety review is completed and these missing documents are publicly posted on the DOGGR website.

**Response 29:** As indicated in **Response 27**, DOGGR disagrees that the safety review is not complete. [Findings from the comprehensive safety review](#) were posted online prior to the SB 380 public meetings taking place. Several other safety-related documents can be found [here](#). All of the test results for wells at the Aliso Canyon Gas Storage Facility are posted online [here](#). DOGGR also created a [video](#) explaining the comprehensive safety review that includes demonstrations and explanations to help members of the public interpret the test results.

0001-18

**Comment Summary 30:** Comments argue that DOGGR has not fully complied with the requirements of SB 380 because it did not post the following materials to its website in a timely manner: SoCalGas' emergency response plan; a letter from DOGGR to SoCalGas about the risk management plan dated October 5, 2016; the Final Failure Analysis prepared for SoCalGas after a pinhole leak from a pipeline at Aliso Canyon; a letter dated January 17, 2017, regarding data gaps in SoCalGas' project file; CPUC's safety assurance inspection results from pipelines at Aliso Canyon; test results for well SS25; and a January 3, 2017, comment letter from the Los Angeles County Fire Department.

**Response 30:** All of these documents have been made available to the public on the DOGGR Aliso Canyon Gas Storage Facility [website](#).

### **Subsurface Safety Valves (SSSVs)**

0001-4, 0001-13, 0002-4, 0132-1, 0198-1, 0210-1, 0251-1, 0259-3, 0292-1, 0020-2, 0073-1, 0251-1, 0259-3, 0283-2

**Comment Summary 31:** Comments request that before injection begins, all wells used for injection or withdrawal should be required to have Subsurface Safety Valves (SSSV) to provide a second level of

protection in the event of a wellhead failure. The safety review fails to consider the risk of damage to or destruction of the wellhead (surface) of the wells at the Aliso Canyon Gas Storage Facility. If a wellhead fails or is damaged where there is no secondary barrier to contain and prevent a gas leak, gas would escape to the atmosphere. The installation of SSSVs will create a secondary level of protection in case of wellhead failure and is thus consistent with DOGGR's mandated "no single point of failure" requirement. The use of SSSVs at the Aliso Canyon Gas Storage Facility is a critical mitigation measure to reduce the impacts of earthquakes, because the Aliso Canyon Gas Storage straddles the active Santa Susana fault and there is a 78 percent chance of a major earthquake nearby in the next 50 years. Have blowout preventers been installed? If SSSVs are not necessary, DOGGR should explain exactly why.

**Response 31:** *The primary containment system of Aliso Canyon Gas Storage Facility wells is the production tubing assembly. The secondary containment system is the isolated tubing casing annulus with tubing packer and production casing cemented in place. Surface safety valves and block valves are installed on all operating gas storage wellhead assemblies at the Aliso Canyon Gas Storage Facility. The wellheads each have primary and secondary valve assemblies to provide redundancy and control in the event of a wellhead failure. Finally, all wells at the Aliso Canyon Gas Storage Facility now contain well control lines that permit operators at the facility's operation center to inject well control fluid should it become necessary for any safety reason, including a leak or change in pressure.*

*The use of SSSVs is not required by DOGGR, however, SSSVs may be used to mitigate the risks of loss of well control due to wellhead damage. An RMP is required from SoCalGas, and that plan must address possible field hazards and mitigation measures. Appropriate risk mitigation protocols are identified in the RMP and may in the future include the use of SSSVs as deemed appropriate in the context of updates to the RMP.*

*SSSVs need to be evaluated in the context of both the benefits and drawbacks. Risks associated with SSSVs include reduction in well reliability from malfunctioning valves, risk to facility employees and contractors due to an increased need to enter the well for maintenance purposes, and other potential risks that should be considered. According to a joint task force report developed by the United States Department of Energy and the United States Department of Transportation entitled, ["Ensuring Safe and Reliable Underground Natural Gas Storage,"](#) the "value of downhole safety valves for natural gas storage is a source of significant controversy" and "it remains unclear whether [SSSVs] should be more widely deployed in U.S. Storage facilities." The report recommends that a "quantitative study to evaluate key uncertainties related to the costs and benefits" of SSSVs be conducted.*

*Requiring SSSVs for all wells without considering the specific circumstances of a well could actually be counterproductive from a risk-based perspective in some instances. DOGGR's risk assessment of compound risk to well bores initiated by earthquake determined that well shear can occur anywhere along the well bore and is not limited to active fault planes. The case was made by examining damage to well Standard Sesnon 4-0, believed to be caused by the Northridge earthquake in 1994. SSSVs alone may not reduce risk of a blowout when a well bore is sheared.*

*For a response related to seismic issues, please see **Response 16.***

*With respect to the question about blowout preventers, this device can only stop a blowout that is contained within the casing and tubing. Once the blowout has exited the casing, there is no way to*

use the blowout preventer to control the blowout. At that point, weighted fluid is needed to attempt to stop the blowout. A blowout preventer is a piece of equipment used for well work, such as drilling or well completion, and is not installed on a completed well. Other equipment in the wellhead assembly serves the same purpose, such as a surface safety valve or a block valve, which can shut-in a wellbore that is experiencing high pressure in the tubing or casing, isolating the pressure from surface equipment until more action can be taken. As a further precaution, all wells at the Aliso Canyon Gas Storage Facility now contain well control lines that permit operators at the facility's operation center to inject well control fluid should it become necessary for any safety reason, including a leak or change in pressure.

## **Well Testing**

0020-5, 0182-2

**Comment Summary 32:** Comments suggest that it is unclear how often the battery of tests will be conducted. A one-time test of each well is not sufficient. There are many factors, including the age of each well and corrosion, that need to be considered. How can DOGGR ensure that there is yearly testing?

**Response 32:** DOGGR promulgated emergency regulations for all gas storage facilities in the State. The emergency regulations require an RMP that addresses a rigorous well testing regime and protocols for corrosion evaluation. DOGGR is currently in the process of promulgating permanent regulations for the oversight of gas storage operations in the State. Consistent with the statutory requirements of [SB 887](#), the proposed [permanent regulations](#) address well construction standards, specified engineering and geologic studies, risk management plans, emergency response, mechanical integrity testing, daily monitoring, leak detection, and inspections. The well construction and testing requirements at the Aliso Canyon Gas Storage Facility take a conservative, rigorous, and precautionary approach.

The emergency, currently in effect, regulations and draft permanent regulations can be viewed here: <http://www.conservation.ca.gov/dog/Pages/UndergroundGasStorage.aspx>

0020-8

**Comment Summary 33:** This comment argues that pressure tests using completion fluid is not sufficient because fluid acts differently than gas.

**Response 33:** Water is nearly incompressible and therefore can be pressurized much more quickly and safely than flammable gas. To verify the mechanical integrity of each well at the facility, the comprehensive safety review required many well tests. While gas diffuses at a greater rate than water, and minor diffusion may not be detected during a pressure test, additional testing is used to determine if a potential flow path exists. A temperature survey may detect a cooling anomaly associated with gas expansion, a noise log can note gas or fluid migration, and a multi-arm caliper can detect deformation in the casing. When all of the safety review tests are run and reviewed, there can be a high level of confidence in the determination of well integrity.

For discussion of the well testing regime, please see **Response 11**.

0340-5

**Comment Summary 34:** This comment states that detection of biogenic gas during the on-site inspection of the pressure monitoring equipment led to a SoCalGas agreement to update the existing methodology for verification/response. DOGGR found SoCalGas to be compliant with the October 2016 Checklist task #9 based on the existing verification/response methodology. The comment argues the presence of biogenic gas in integrity tested wells raises questions which need to be addressed to which well types and annular sources the gas was detected.

**Response 34:** *Biogenic gas is created by natural decomposition of organic material and is common at shallow depths in marshes, landfills, and other low-lying areas. The presence of biogenic gas is common in sediments and sedimentary rock throughout California. There are numerous landfills in California that have installed methane capture systems to reduce fugitive emissions. In some wells at the Aliso Canyon Gas Storage Facility, biogenic gas was suspected and verified through analysis to diffuse into the annulus of the production and surface casing, which is to be expected. No biogenic gas was detected in the tubing and production casing annulus. The presence of biogenic gas at the Aliso Canyon Gas Storage Facility was addressed in [Attachment B](#), Checklist task #9 and Checklist task #11, "Aliso Canyon Well Pressure Monitoring Policies and Procedures" revision dated November 17, 2016, in the sections regarding sustained casing pressure. This revision is posted to the DOGGR website under Aliso Canyon, Current Correspondence, Attachment B, Checklist task #9 and under Checklist task #11.*

### **Fitness for Service Analysis**

0340-2

**Comment Summary 35:** The comment states the SoCalGas Fitness for Service Analysis does not consider the wellhead in its discussion of a dual-barrier design to protect its tubing-only gas flow system.

**Response 35:** *The fitness for service analysis requested by the CPUC reviewed and validates design, construction, operations, maintenance, and other system integrity issues to demonstrate that the Aliso Canyon Gas Storage Facility is safe to resume injection operations.*

*The fitness for service principles have been applied to natural gas pipelines and surface facilities for many years, and SoCalGas is applying the same principles to the safety and integrity of the gas storage system upstream of the pipeline isolation valve. The "Fitness for Service Analysis of the Aliso Canyon Storage Facility" discusses and considers the wellhead and associated piping and valves in numerous places throughout the document. In the section discussing elimination of a single-point-of-failure, SoCalGas indicates it has implemented well integrity evaluations, continuous pressure monitoring, daily leak detection surveys, and other measures at the well site to reinforce the ongoing fitness for service of the storage wells at the Aliso Canyon Gas Storage Facility. The wellhead and associated piping and valves are inherently absorbed in this well site evaluation.*

### **Pipeline Corrosion**

0001-16, 0338-2

**Comment Summary 36:** A CPUC required internal corrosion assessment at the Aliso Canyon Gas Storage Facility for pipelines used for injection and withdrawal was started, however, no final report has been made available to the public on the CPUC website. Without the results of this report, neither DOGGR, nor the public, can be sure that SoCalGas has taken necessary action to ensure that its pipelines are safe

to handle new gas injections. DOGGR should require that SoCalGas complete its RCA of the September 12, 2016, pipeline leak and implement a structured framework for the corrosion control of all wells, piping, and reservoir at Aliso Canyon before approving any new injection into Aliso Canyon.

**Response 36:** *DOGGR received a copy of the final report and has made it available to the public on the DOGGR Aliso Canyon [website](#). The referenced internal corrosion assessment is discussed in Checklist Task #6. SoCalGas conducted an internal corrosion assessment on surface injection and withdrawal pipelines as directed in the CPUC's Safety and Enforcement Division's Directive issued September 20, 2016. The assessment was conducted in accordance with the Gas Standards and DNV-GL Internal Corrosion protocols. SoCalGas provided CPUC the final Failure Analysis Report prepared by its contractor, DNV-GL. SoCalGas delivered the final Failure Analysis report to CPUC on Nov 9, 2016. This report can be found [here](#).*

### **Decision to Resume Injection Should Be Transparent, Open, With Accountability**

0001-26

**Comment Summary 37:** To ensure that all public comments have been taken into account, DOGGR should provide written responses to all written comments received on this matter, and post those responses on its website so that the public can review them.

**Response 37:** *This document is DOGGR's summary of the public comments received and its responses. Transcripts from the public meetings and all written comments received during the public comment period have been made available on the DOGGR Aliso Canyon [website](#).*

0001-27

**Comment Summary 38:** DOGGR and CPUC should hold another public meeting prior to approval of injection to explain their proposed decision, to gather public comment, and to maximize public participation. If DOGGR intends to approve injection, a future public meeting should be held after written responses to comments are published to explain the rationale for the proposed decision and to provide the public with an opportunity to comment.

**Response 38:** *[SB 380](#) required DOGGR to "hold at least one duly noticed public meeting in the affected community to provide the public an opportunity to comment on the safety review findings and on the proposed pressure limit." DOGGR has already exceeded the meeting requirements of SB 380 and at this time does not plan on any future public meetings related to the Safety Review and the Maximum Pressure Limits.*

0001-29

**Comment Summary 39:** This comments suggests that prior to making a decision to approve injection, DOGGR should consider certain documents and should add them to the administrative record. The documents relate to information on the DOGGR, CPUC, SoCalGas, and DPH websites; public meetings; public comments; PRA requests; DOGGR's gas storage rulemaking; a variety of presentations; and a selection of news articles.

**Response 39:** *At the time this comment was made, the State Oil and Gas Supervisor had not yet made a decision regarding whether to allow injections to resume at the Aliso Canyon Gas Storage Facility. However, DOGGR reviewed the documents identified in the comment. Administrative*

*records for litigation generally are governed by statute. DOGGR will strictly comply with the rules for an administrative record that govern any judicial proceeding.*

0020-1, 0096-1, 0147-4

**Comment Summary 40:** These comments question why there is no explicit mention of the fact that the wells used at the Aliso Canyon Gas Storage Facility are repurposed oil wells, which were not designed to withstand the pressure exerted on them from decades of injection and withdrawal of natural gas. That the wells are repurposed increases the risk of another blowout due to structural insufficiency.

**Response 40:** *As mentioned previously, the purpose of the public meeting as required by [SB 380](#) was to provide members of the public an opportunity to comment on the [safety review findings](#) and the [proposed minimum and maximum reservoir pressure](#) at the Aliso Canyon Gas Storage Facility. DOGGR's safety review and pressure limit, as well as other regulatory requirements, are intended to ensure that any risks associated with operating the facility are evaluated and minimized.*

*The prior use of the wells at the Aliso Canyon Gas Storage for oil production is a matter of public record. Regardless of the age or past use of a well, all wells located at the Aliso Canyon Gas Storage Facility have been subject to rigorous testing requirements and new operational requirements described in previous responses and on DOGGR's [website](#). Any well integrity issues would be identified by the required testing, and dealt with in a manner described in [Order No. 1109](#).*

0182-4

**Comment Summary 41:** This comment suggests that contractors should be held to the same regulations as the operator if they are working at the facility and responsible for any additional leaks.

**Response 41:** *As mentioned previously, the purpose of the public meeting as required by [SB 380](#) was to provide members of the public an opportunity to comment on the [safety review findings](#) and the [proposed minimum and maximum reservoir pressure](#) at the gas storage facility. DOGGR's safety review and pressure limit, as well as other regulatory requirements, are intended to ensure that any risks associated with operating the facility are evaluated and minimized.*

*Additionally, regardless of who performs the work, the operation of a gas storage well is subject to all regulations overseen by DOGGR.*

0364-2

**Comment Summary 42:** This comment requests that whoever put together the safety review for the gas company should put their state registration license on the review for increased transparency and accountability.

**Response 42:** *As mentioned previously, the purpose of the public meeting as required by [SB 380](#) was to provide members of the public an opportunity to comment on the [safety review findings](#) and the [proposed minimum and maximum reservoir pressure](#) at the Aliso Canyon Gas Storage Facility. DOGGR's safety review and pressure limit, as well as other regulatory requirements, are intended to ensure that any risks associated with operating the facility are evaluated and minimized.*

*No single individual puts "together the safety review for the gas company," and a review of all of the different elements in the RMP and comprehensive safety review require a broad array of expertise that is not typically held by a single individual. The safety review requirements were determined by a*

team from DOGGR, the National Labs, the CPUC, and other experts. These requirements significantly exceed federal requirements. The test results were first reviewed by the vendor technician on site and witnessed or approved by a SoCalGas technical representative. Results were then reviewed by SoCalGas technical staff and by third-party consultants before being submitted to DOGGR staff for evaluation. At DOGGR, the test results were evaluated by trained first-line technical staff and approved by experienced senior engineers.

Under existing laws and regulations, documents related to the Aliso Canyon Gas Storage Facility that require engineering and geologic expertise must be developed by a licensed professional with oversight provided by the [Board of Professional Engineers, Land Surveyors and Geologists](#) within the Department of Consumer Affairs and are subject to the following laws and regulations:

[Professional Engineers Act \(Business and Professions Code sections 6700-6799\)](#)

[Professional Land Surveyors' Act \(Business and Professions Code sections 8700-8805\)](#)

[Board Rules \(Title 16, California Code of Regulations sections 400-476\)](#)

[Geologist and Geophysicist Act \(Business and Professions Code section 7800-7887\)](#)

[Regulations Relating to the Practices of Geology and Geophysics \(Title 16, California Code of Regulations sections 3000-3067\)](#)

### **New Regulations Should be Completed Prior to Resuming Injection**

0001-30

**Comment Summary 43:** The DOGGR rulemaking should be completed prior to approving new injection at the Aliso Canyon Gas Storage Facility, and those new regulations should apply to the Aliso Canyon Gas Storage Facility. DOGGR is conceding that additional risk management requirements will be imposed on gas storage facilities in the future but is unwilling to wait until that process is complete to consider a final decision on gas injection at the Aliso Canyon Gas Storage Facility.

**Response 43:** DOGGR has complied or acted consistent with [SB 380](#), [Order No. 1109](#), the Governor's [emergency proclamation](#) of January 6, 2016, and DOGGR's implementing statute and regulations in evaluating and taking actions to ensure the safety of the Aliso Canyon Gas Storage Facility. SB 380, Order No. 1109, and the Governor's emergency proclamation were designed specifically to mitigate effects of the October 2015 gas leak and to ensure that resuming injections at the facility would not threaten public health or safety or the environment. While the proclamation required DOGGR to adopt emergency regulations to apply to all gas storage facilities in the State, the directive was prompted by and served to address immediate safety concerns at the Aliso Canyon Gas Storage Facility. The emergency regulations took effect in February 2016 and remain in effect.

In addition, DOGGR relied in part on its existing statutory and regulatory authority to impose additional safety requirements on the Aliso Canyon Gas Storage Facility that must be satisfied before it may resume injections. The intent behind the current formal rulemaking process is to solicit public input on whether and how to expand or modify the requirements in the emergency regulations. The process has yet to run its course, and it is premature to surmise what the resulting regulations will entail. The focus of the [proposed permanent regulations](#) has more to do with gas storage facilities in the State generally, rather than the Aliso Canyon Gas Storage Facility specifically. However, a number of the key requirements in the proposed regulations have already been implemented at the Aliso Canyon Gas Storage Facility. The emergency regulations in place

*and compliance and acts made consistent with SB 380, Order No. 1109, the Governor's emergency proclamation, and DOGGR's statutory and regulatory authorities are sufficient for the Supervisor to make a determination as to the safety of the Aliso Canyon Gas Storage Facility.*

### **CPUC Feasibility Determination**

0001-1, 0001-3

**Comment Summary 44:** Injection should not be approved until after the CPUC concludes the investigation required by SB 380 to determine the feasibility of minimizing or eliminating the use of the facility at the Aliso Canyon Gas Storage Facility. CPUC indicates it will reach a final decision in mid-2018, and the engineering and consulting firm retained by Los Angeles County believes that withdrawals from the facility are unlikely to be necessary before then.

**Response 44:** *Please see Responses 1 and 2.*

### **Energy Reliability**

0015-3, 0001-19, 0001-20, 0001-21, 0015-2, 0125-3, 0168-2, 0178-3, 0186-5, 0188-4, 0190-3, 0182-1, 0345-1, 0346-2

**Comment Summary 45:** These comments generally argue that approval of injection in the near future would have no material impact on gas reliability for the time period February-June 2017. Policies implemented to reduce the demand for natural gas in Southern California are working. Continuing those policies and the greater generation of hydroelectric facilities from the large amounts of rain and snowfall will buy the region time to implement additional mitigation measures, which will eliminate the need to withdraw gas from the Aliso Canyon Gas Storage Facility during summer 2017 or winter 2017-2018. Even if there is a desire to withdraw gas, a CPUC report indicates that there will not be sufficient wells available at the Aliso Canyon Gas Storage Facility to meet peak summer day demand. Based on CPUC reliability studies, no withdrawal of gas from the Aliso Canyon Gas Storage Facility should have been necessary on January 24 and 25, 2017. The CPUC should conduct an investigation into the circumstances surrounding the timing and necessity of the gas withdrawals, and the results of the investigation should be made public. The investigation should be completed prior to a final decision to allow injection to begin. There is no current need for new gas injections at the Aliso Canyon Gas Storage Facility. The current amount of gas in storage at is 14.8 billion cubic feet (Bcf). Thus, 9.8 Bcf of gas is currently available for withdrawal without the need for any new injections. Based upon the minimum gas storage requirement of 5 Bcf, if needed, gas could be withdrawn at the rate of recent withdrawals on January 24 and 25, 2017, for 326 days without the need for any new injections.

**Response 45:** *Please see Responses 1 and 2. The CPUC provided additional comment responses related to energy reliability in the addendum at the end of this document.*

0022-2

**Comment Summary 46:** This comment suggests that SoCalGas shouldn't be allowed to invest in old, worn out infrastructure, but should invest in renewable energy.

**Response 46:** *As mentioned previously, the purpose of the public meeting as required by [SB 380](#) was to provide members of the public an opportunity to comment on the [safety review findings](#) and*

the [proposed minimum and maximum reservoir pressure](#) at the Aliso Canyon Gas Storage Facility. DOGGR's safety review and pressure limit, as well as other regulatory requirements, are intended to ensure that any risks associated with operating the facility are evaluated and minimized.

*Encouraging increased development of the use of renewable energy is a high policy priority for the State of California, but beyond the scope of this meeting and this document.*

### **Air Quality Management District**

0219-1

**Comment Summary 47:** This comment suggests that South Coast AQMD should adjust hours or schedules to get someone out right away to verify odors reported in the early morning hours (5:30 a.m.).

**Response 47:** *As mentioned previously, the purpose of the public meeting as required by [SB 380](#) was to provide members of the public an opportunity to comment on the [safety review findings](#) and the [proposed minimum and maximum reservoir pressure](#) at the Aliso Canyon Gas Storage Facility. DOGGR's safety review and pressure limit, as well as other regulatory requirements, are intended to ensure that any risks associated with operating the facility are evaluated and minimized.*

*For information related to the South Coast AQMD, please visit their website at: <http://www.aqmd.gov/home/regulations/compliance/aliso-canyon-update>.*

*Also, please see **Response 25** for a response related to leak detection.*

### **Water Boards**

0224-4, 0261-3

**Comment Summary 48:** These comments state the concern that no one knows the status of the groundwater, although the water board is supposedly investigating this.

**Response 48:** *On February 19, 2016, the Executive Office for the Los Angeles Regional Water Quality Control Board sent a letter to SoCalGas stating that pursuant to Water Code section 13267, the Regional Board would be "investigating the unauthorized discharge of workover fluids and all other workover treatments associated with SS25." While that investigation will focus on whether the catastrophic leak resulted in groundwater impacts, the focus of the comprehensive safety review is ensuring that no such leak occurs in the future.*

### **Other Impacts on Residents**

0129-2, 0152-1, 0182-8, 0225-2, 0242-4, 0261-3, 0261-5, 0277-3, 0422-1

**Comment Summary 49:** Residents had to leave their homes, and finding temporary housing was challenging. The temporary housing coordinator could not find safe and/or acceptable housing in a timely manner, making the experience stressful on the evacuees. SoCalGas has not paid for medical and veterinary bills as the company led people to believe and should have paid for air purifiers rather than reimbursing residents for them. SoCalGas has denied relocation benefits and house-cleaning services. Some residents have spent all of their money in response to the leak and need financial

reimbursement or assistance from SoCalGas. Reopening the facility will negatively impact our property values. Ratepayers should not have to pay rate increases if most of SoCalGas' costs from the disaster are covered by its insurance. Additional costs should be borne by the operator, the parent company Sempra Energy, and the shareholders.

**Response 49:** *DOGGR understands that thousands of people's lives were disrupted in many different ways because of the blowout at the Aliso Canyon Gas Storage Facility. However, DOGGR has no authority related to the impact on property values, or authority related to the reimbursement of costs that resulted from the leak at the Aliso Canyon Gas Storage Facility. As discussed, the purpose of the public meeting as required by [SB 380](#) and the written comment period was to comment on the safety review and the proposed pressure limit at the Aliso Canyon Gas Storage Facility. DOGGR's safety review and pressure limit, as well as other regulatory requirements, are intended to ensure that any risks associated with operating the facility are minimized and leaks like the one that occurred from well SS25 do not recur.*

### **California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA)**

0001-22

**Comment Summary 50:** The decision by DOGGR to allow gas injection at the Aliso Canyon Gas Storage Facility is a project subject to CEQA. Because the decision to allow reinjection and the determination of the minimum and maximum require discretion by DOGGR and there is a potential for a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment, CEQA compliance is required. DOGGR must prepare an Environmental Impact Report (EIR) before making its decision.

0001-23

**Comment Summary 51:** Compliance with CEQA and preparation of an EIR would enable the public and DOGGR to understand the full impacts of DOGGR's decision, meaningfully explore alternative means of reducing demand for natural gas through various mitigation measures, and thereby potentially avoid the need for additional gas injection into the Aliso Canyon Gas Storage Facility. It will not be until July or August 2017 that concerns about gas curtailment could be impacted by gas injections. By that time, the CEQA and RCAs can be completed.

**Comment Summary 52:** Preparation of an EIR will facilitate community participation and achieve DOGGR's goal to hear the public's opinions.

0001-25

**Comment Summary 53:** The use of a CEQA exemption would be inappropriate due to unusual circumstances. According to the California Code of Regulations, CEQA exemptions may not be used "where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances." In *Berkeley Hillside Preservation v. City of Berkeley* (2015) 60 Cal. 4th 1086, 1105 (2015), the California Supreme Court gave two explanations regarding "unusual circumstances," and both apply to the decision on the resumption of injection at the Aliso Canyon Gas Storage Facility. The facility is distinguishable from other storage facilities in its history and track-record of having caused extensive human and environmental damage, its location on an earthquake fault, its size (the largest underground gas storage facility on the West Coast), its storage of large amounts of gas at high pressure, it being subject to a complex set of testing and review that was developed and required by State statute and emergency regulations following the largest natural gas leak in United

States history, but the decision to allow injections to resume, along with the minimum and maximum pressure limits, will have significant impacts on the environment. Additionally, DOGGR's proposal of numerous mitigation measures demonstrates that injection of gas into Aliso Canyon may have a significant impact on the environment. An EIR should be prepared to inform the public and decision-makers of the project's full environmental impacts and to explore mitigation measures.

***Response to comments 50-53 regarding CEQA:***

*SB 380 identified specific steps, including detailed testing, multiple agency review, and a public participation opportunity, that must be completed before gas injection can resume at Aliso Canyon. Environmental review pursuant to the California Environmental Quality Act is not a pre-condition of reinjection. Rather, [SB 380](#) authorizes the Supervisor to allow injections to resume after the comprehensive safety review is complete, DOGGR holds a public meeting, the Supervisor approves the maximum and minimum reservoir pressures for the Aliso Canyon Gas Storage Facility, the Supervisor determines that the facility is safe to operate, and CPUC concurs with that determination.*

*DOGGR's response to the leak at SS25 is not a "project" as CEQA defines that term. In response to emergency circumstances, DOGGR issued Order No. 1106, which required the operator to suspend injection of gas into the facility as part of the effort to stop the leak from well SS25. After the leak at SS25 was stopped, DOGGR issued Order no. 1109 to require the operator to test, remediate, and reconstruct wells to avoid any further leaks at the facility. DOGGR's issuance of Order No. 1106 and Order No. 1109, and its adherence to the requirements of SB 380 in lifting the suspension of injection, are regulatory enforcement actions to require and facilitate emergency repairs necessary to return the Aliso Canyon Gas Storage Facility to service. Lifting the suspension is not an entitlement for new use, and therefore is not a "project" under CEQA.*

*Moreover, CEQA expressly exempts the type of regulatory and emergency response activities at issue here. While CEQA does not require environmental review of these activities, DOGGR's comprehensive safety review included in-depth study of the operations at the facility. As a result, the facility will operate at a lower maximum reservoir pressure, and many of the wells previously authorized for injection will be isolated from the reservoir and plugged and abandoned (i.e., unusable for injections).*

*In addition, DOGGR provided an opportunity for public engagement by holding two public meetings, rather than the one required by [SB 380](#). In an effort to ensure the opportunity for meaningful community participation, and beyond the requirements of SB 380, DOGGR invited written and oral comments from the public from January 17 through February 6, 2017. DOGGR carefully reviewed and considered all comments received both at the meetings and in other written comments submitted during this time. This engagement allowed DOGGR to hear directly from community members and to take that input into account to determine how to lift the suspension.*

## **California Public Utilities Commission Addendum**

### **Responses provided by CPUC Staff regarding Energy Reliability Associated Comments:**

Comments of County of Los Angeles, Re: Aliso Canyon Comprehensive Safety Review, February 6, 2017

*On February 6, the County of Los Angeles submitted comments to the Division of Oil, Gas, and Geothermal Resources in response to the Aliso Canyon Comprehensive Safety Review. While beyond the scope of the safety review, the County incorporated comments concerning the reliability of gas service.*

**Los Angeles County Comment 1:** Page 5, “Injection should not be approved until after the CPUC concludes its legislatively required investigation to determine the feasibility of minimizing or eliminating Aliso Canyon. The CPUC will be voting on opening the proceeding on the future of Aliso Canyon and a final decision is expected in Mid-2018.”

The County requests that a decision on approving injections at Aliso Canyon be delayed until after the completion of this legislatively mandated CPUC process.

***CPUC Staff Response:** SB 380 (Pavley) acknowledges that Aliso Canyon could be needed for reliability in the short term and that changes could be made to the overall gas system in Southern California that could reduce or eliminate that need in the long term. The investigation referred to in comment “A” is the long term study required under Public Utilities Code 714. Public Utilities Code section 715 addresses the requirement to assess short term reliability issues by requiring the CPUC to issue a report that determines the range of working gas needed in the field to ensure reliably and for the CPUC Executive Director to order the utility maintain that specified range of working gas. The County does not provide any basis for why the directive in Public Utilities Code Section 715 should be ignored. Later comments suggest that mitigation measures are working thus eliminating the need for Aliso as a reliability resource. These comments are best framed as suggesting that the 715 report should set the amount of need working gas needed for reliability at or near zero. Those comments are discussed further below.*

**Los Angeles County Comment 2:** Page 6, B. A Review by Engineering and Consulting Firm EES Demonstrates that the Success of Mitigation Measures in Reducing Gas Demand Provide Sufficient Time to Delay a Decision on Injection until After the CPUC Proceeding. The County further comments that “Based on the success of the mitigation measures in reducing gas demand, and recommended actions in EES’s comment letter, it is EES’s opinion that withdrawals from Aliso Canyon are very unlikely to be necessary between now and the end of 2018. As a result, there is time to complete the CPUC feasibility proceeding and for all parties to have the benefits of that proceeding on the future of Aliso Canyon before authorizing re-injections at the facility.”

***CPUC Staff Response:** We agree that mitigation measures were successful in reducing gas demand and that extensions of and enhancements to these measures as well as the addition of new ones will further limit gas demand. However:*

1. *The 715 Report already accounts for the success of the mitigation measures.*
2. *EES does not consider the impact of a mild summer, in terms of peaking temperature which drives peak demand on the need for withdrawals. While the summer of 2016 was on average historically warm, there were only two weekdays where temperatures exceeded 90 degrees on the coast. Peak electric (and thus summer gas) demand generally occurs during sustained heat events with multiple days above 90 degrees on the coast. By ignoring a key driver of demand -- temperatures (daily and hourly) EES inappropriately attributes the lack of withdrawals solely to mitigation measures.*
3. *EES' analysis focused on balancing the gas system over a full day, in the summer gas storage is critical to meet hourly changes in demand caused by ramping of electric generation. While the joint agency Summer Analysis modeled hourly demand, EES did not.*

**Los Angeles County Comment 3:** Page 21, IX. Approval of gas injection would have no material impact on gas reliability for the two months remaining this winter because it will be the middle of February, at the earliest, before any injection could occur. Approval of injection in the near term would not materially impact gas reliability for the rest of the winter.

**CPUC Staff Response:** *This comment is now moot. Please refer to the updated 715 Report for a discussion on the range of working gas necessary to ensure gas reliability.*

**Los Angeles County Comment 4:** Mitigation measures are proving to be successful in reducing overall demand for gas and gas withdrawals should not be necessary during summer 2017 or winter 2017-18. The comments further note higher hydro generation, impacts of mitigation measures will eliminate the need to withdraw from Aliso Canyon. Further the comment states that even with injections there will not be sufficient wells available to meet peak day demand.

**CPUC Staff Response:** *Due to electric transmission constraints, increased hydro generation will only minimally reduce the need for generation in the Los Angeles region, and those impacts will be addressed in updates to the 715 Report. We agree the mitigation measures will reduce gas demand, and the success of these programs is incorporated into the [715 Report](#). Based on information from Summer Technical Assessment and subsequent public comments this report will be updated.*

### **CPUC Staff Responses to Reliability Related Public Comments from the February 1 and 2 Public Meetings**

There were three reliability related comments made during the February 1 and 2 Public Meetings.

**Comment 1:** Dr. Najm of the Porter Ranch Neighborhood Council stated that his own extensive analysis of the data makes clear that the natural gas delivery infrastructure can operate without Aliso Canyon. Dr. Najm expressed support for using Aliso Canyon as an emergency facility.

**CPUC Staff Response:** *Dr. Najm did not submit his analysis in the public comment of February 1 and 2. However, an analysis was submitted with a cover letter as comment to the CPUC*

mandated Public Utilities Code Section 715 [report](#). The comments to the Section 715 report and responses to comments to his cover letter and analysis are attached.

**Comment 2:** Multiple people expressed their belief that the facility is not needed to meet California's energy needs.

**CPUC Staff Response:** *The CPUC independently, and jointly with the California Energy Commission, the California Independent System Operator, and Los Angeles Department of Water and Power, conducted and made public multiple studies and analyses of the natural gas infrastructure. These studies and analyses identified the need for the use of the Aliso Canyon Gas Storage Facility to avoid curtailments and maintain public safety under conditions that have occurred and are reasonably expected to occur in the future. These studies have also been peer reviewed by Los Alamos National Laboratories.*

*Specific information describing the operation of the gas system, demand, supply, and the role of storage can be found in the Aliso Canyon Risk Assessment Technical Report, April 4, 2016; the Aliso Canyon Winter Risk Assessment Technical Report, August 23, 2016; the Aliso Canyon Action Plan to Preserve Gas and Electric Reliability for the Los Angeles Basin, 2016; and the Aliso Canyon Gas and Electric Reliability Winter Action Plan, August 22, 2016. These and additional studies can be accessed on the CPUC website at: <http://www.cpuc.ca.gov/aliso/>.*

**Comment 3:** One commenter supported reopening of the facility following completion of tests, in the interest of ensuring a reliable energy supply.

**CPUC Staff Response:** *As noted in the responses to comments 1 and 2 above, the CPUC and the joint energy agencies have conducted extensive analysis to determine and identify the risk of curtailments without the use of Aliso Canyon. Additionally, the CPUC and joint energy agencies have developed and implemented independently and with the cooperation of SoCalGas measures to reduce demand or otherwise limit the risk. The technical assessments and action plans, as well as additional supporting analyses, are available at the CPUC website at: <http://www.cpuc.ca.gov/aliso/>.*