

# AGENDA

## SEISMIC MONITORING ADVISORY COMMITTEE

**May 11, 2023 at 9:30 A.M.**  
Calpine Geothermal Visitors Center  
15500 Central Park Road, Middletown

Join Zoom Meeting

<https://us06web.zoom.us/j/83978537153?pwd=SjF5cXJKYUoyWjZITko3eTFJbE9JZz09>

Meeting ID: 839 7853 7153

Passcode: 696125

One tap mobile

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- I. Introductions
- II. Approval of SMAC minutes from **November 10, 2022 meeting**
- III. Southeast Geysers Effluent Pipeline (SEGEP) Operations & Northern California Power Agency Update – Ed Voge, NCPA
- IV. Santa Rosa Geysers Recharge Project (SRGRP) Update & Calpine Update - Craig Hartline, Calpine Corporation
- V. Report from CALGEM – California Geologic Energy Management Division – Amar Rao
- VI. Report on US Geothermal - Western Geo Power– Scott Nichols
- VII. Anderson Springs Community Service District – Rose Knudsen
- VIII. Anderson Springs Public Input – Jacquelyn Bartlett
- IX. Cobb Area Water –
- X. Cobb Area Public Input – Robert Stark
- XI. Middletown Community Input –
- XII. General Public Input
- XIII. Schedule Next Meeting for \_\_\_\_\_
- XIV. Adjournment

# SEISMIC MONITORING ADVISORY COMMITTEE (SMAC)

Thursday, November, 10, 2022

## MINUTES

Meeting Called to order by Scott Harter, Committee Chair (Lake County Special Districts) at 9:35 A.M.

Minutes recorded via Zoom and transcribed to Draft Minutes by Lori Baca.

### **I. Introductions**

Introductions conducted by Scott Harter:

*Present:* Scott Harter, Committee Chair (Lake County Special Districts), Craig Hartline (Geysers Power Company, LLC), Ed Voge (Northern California Power Agency), Dylan Esquivel (Northern California Power Agency), Danielle Seperas (Calpine) Amar Rao (CALGEM), Robert Stark (Cobb Community Representative) Jacquelyn Bartlett (Anderson Springs Community)

### **II. Approval of SMAC minutes from May 12, 2022 meeting**

Motion made by Robert Stark to approve the minutes, second by Dylan Esquivel, all in favor. Motion carried.

### **III. Update of SE Geyser Pipeline Operations, Dylan Esquivel and Ed Voge (Figures 1-7)**

- Historical SE Geysers Effluent Pipeline Deliveries to The Geysers since 1997
  - Total Daily Delivery = 63.8 billion gallons at an average rate of 4,850 gpm to the South East Geyser steam field for injection (see Figure 1)

#### ***Reporting period April 1, 2022 through September 30, 2022***

- Average Daily Injection = 1.66 MGD or 1,150 gpm
- SEGEP Availability = 61.2%
- Observed Seismicity
  - The USGS Recorded 50 Seismic Events of Magnitude 1.5 and greater, this similar to the 51 seismic events over the previous six month reporting period.
  - Steam Production for the area in the reporting period was 17.5 billion pounds mass for this reporting period.
  - There was one magnitude 3.0 or greater seismic event in the Southeast Geysers during this reporting period.
  - Steam production for the Southeast Geysers area was 17.5 billion pounds mass for the reporting period, water injection was 4.24 billion pounds mass.
- Seismic Activity in The Geysers (KCGRA)
  - 318 events of magnitude 1.5 were recorded for this reporting period. There were 5 events of magnitude 3.0 or greater. The

largest event was magnitude 4.19 which all occurred on June 28, 2022. Figure 6 shows the trends of seismic events for the Geysers since 2010 while Figure 7 shows the locations of the events for the last six months.

*There was much discussion on each figure noted above. Please see presentation on Calpine website for additional data details*

**IV. Geysers Power Company, LLC Report, Craig Hartline (Figures 1-24)**  
**Reporting period, April 1, 2022 to September 30, 2022**

- Seismic Monitoring Networks
  - LBNL/ Geysers Power Company, LLC Seismic Monitoring Networks
  - LBNL/ Geysers Power Company, LLC Calpine Strong Motion Network
  - USGS/ Northern California Seismic Network
  - Upgrades to Radio Telemetry Systems
- Field wide Induced Seismicity Analysis
  - Water Injection and Induced Seismicity Animation
- 3D Structural Model
- Strong Motion Data Analysis
  - Peak Ground Acceleration vs. Hypocentral Distance
- Community Hotline
  - Seismic Events of Concern
  - 28 June 2022 Magnitude 4.19 Seismic Event Series

*There was much discussion on each figure noted above. There was also discussion regarding the difference between bedrock and sediment and the impact that surface waves have on each. Please see presentation on Calpine website for additional data details.*

**V. Report on CALGEM, Amar Rao**

Amar was present and discussed the conclusion of the Annual Project Review with Calpine. Three wells received mechanical integrity tests and all three were approved. Abandoned two wells.

**VI. Report on US Geothermal – Western Geo Power, Scott Nichols**

Scott Nichols was not present

**VII. Anderson Springs Community Service District, Rose K**

Rose Knudsen was present and had a few questions regarding the month of October in. These questions were answered by Craig Hartline (See video for more information)

**VIII. Anderson Springs Public Input – Jacquelyn Bartlett**

Jacquelyn Bartlett was not present

**IX. Cobb Area Water**

A representative for Cobb Area Water is needed

**X. Cobb Area Public Input, Robert Stark**

Robert is please with all of the work being done. No other input given.

**XI. Middletown Community Input**

A representative for Middletown is needed.

**XII. General Public Input – Scott Harter mentioned open SMAC Committee positions and the need to get them filled.**

Robert Stark talks about Cobb Area Water being short staffed and not able to attend meetings.

Discussion regarding the possibility of having one of the meetings at the Little Red School in Cobb and/or having one in the evening.

No other General Public Input.

**XIII. Schedule Next Meeting for May 11, 2023****XIV. Adjournment**

Motion– , Second- , all in favor (everyone)

Meeting Adjourned at approx. 10:48 AM

*Next Meeting scheduled for Thursday May 11, 2023*

**Meeting Agenda and Full Presentations are available online at:**  
<http://www.geysers.com/smac.aspx>