

AGENDA

SEISMIC MONITORING ADVISORY COMMITTEE

November 10, 2022 at 9:30 A.M.
Calpine Geothermal Visitors Center
15500 Central Park Road, Middletown

Join Zoom Meeting

<https://us06web.zoom.us/j/84782735618?pwd=bHBLNTNwdWVFSW8yanpRMW5JZVNJZz09>

Meeting ID: 847 8273 5618

Passcode: 419351

- I. Introductions
- II. Approval of SMAC minutes from ***May 12, 2022 meeting***
- III. Southeast Geysers Effluent Pipeline (SEGEP) Operations & Northern California Power Agency Update – Ed Voге, 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, May 12, 2022

Virtual Meeting Due to COVID-19 Concerns

<https://us06web.zoom.us/j/86398274023?pwd=bVNVTHV1SVZOVys1NVVtLytQU2M1dz09>

Meeting ID: 863 9827 4023

Passcode: 606173

MINUTES

Meeting Called to order by Scott Harter, Committee Chair (Lake County Special Districts) at 9:38 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), Danielle Seperas (Calpine) Amar Rao (CALGEM), Jerry Salera (CALGEM), Mathew Densmire (CALGEM), Charlene Wardlaw (CALGEM), John Huff (CALGEM) Robert Stark (Cobb Community Representative), Percival Pamatian (BLM)

II. Approval of SMAC minutes from November 8, 2021 meeting

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

III. Update of SE Geysers Pipeline Operations, Ed Voge (Figures 1-7)

- Historical SE Geysers Effluent Pipeline Deliveries to The Geysers since 1997
 - Total Daily Delivery = 63.5 billion gallons at an average rate of 4,926 gpm to the South East Geysers steam field for injection.

Reporting period, October 1, 2021 through March 31, 2022

- Average Daily Injection = 1.75 MGD or 1,213 gpm
- SEGEP Availability = 72.5%
- Observed Seismicity
 - The USGS Recorded 51 Seismic Events of Magnitude 1.5 and greater, this is an increase from 34 seismic events over the previous six month reporting period.
 - Steam Production for the area in the reporting period was 17.7 billion pounds mass for this reporting period.
 - There were no magnitude 3.0 or greater seismic events in the Southeast Geysers during this reporting period.

- Steam production for the Southeast Geysers area was 17.7 billion pounds mass for the reporting period, water injection was 6.39 billion pounds mass.
- Seismic Activity in The Geysers (KCGRA)
 - 370 events of magnitude 1.5 were recorded for this reporting period. There were 6 events of magnitude 3.0 or greater. The largest event was magnitude 3.78 which all occurred on March 3, 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, as well as discussion regarding the drought and the impact the lake levels have on production. Please see presentation on Calpine website for additional data details

IV. Geysers Power Company, LLC Report, Craig Hartline (Figures 1-35) Reporting period, October 1, 2021 through March 31, 2022

- Seismic Monitoring Networks
 - USGS/ Northern California Seismic Network
 - LBNL/ Geysers Power Company, LLC Seismic Monitoring Networks
 - LBNL/ Geysers Power Company, LLC Calpine Strong Motion Network
 - Upgrades to Radio Telemetry Systems
- Fieldwide Water Injection
- Fieldwide Seismicity Analysis
- Water Injection and Induced Seismicity Analysis
- Community Hotline
 - Seismic Events of Concern
- Strong Motion Data Analysis
 - Peak Ground Acceleration vs. Hypocentral Distance
 - Anderson Springs Site Amplification
- Water Injection Goals
 - 3D Pre-Drilling Project Analysis
 - Injection Well Planning
- Applied Seismology InSite Geo Software
- Summary

There was much discussion on each figure noted above. There were also a few questions from attendees regarding additional sources of wastewater, Scott Harter talks about FULL CIRCLE. Please see presentation on Calpine website for additional data details.

V. Report on CALGEM, Amar Rao

Amar was present and update information regarding submitted permits and also talks about recent testing.

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 not present
- VIII. Anderson Springs Public Input – Jacquelyn Bartlett**
Jacquelyn Bartlett was not present
- IX. Cobb Area Water**
A new representative for Cobb Area Water (replacing Ben Murphy) is needed
- X. Cobb Area Public Input, Robert Stark**
Robert Stark was present and thanked the Committee, mentioning how valuable the community thinks the monitoring is. Also a discussion of the future of water, drought and lake levels? (Please refer the video for more details)
- XI. Middletown Community Input**
Linda Darms has resigned and a replacement representative for the Middletown Community is needed.
- XII. General Public Input – Danielle Seperas** mentions the struggle we have had finding replacement reps and also wanting more engagement with Cobb Area Water. She mentions recruiting more community members to join the committee and attend meetings. Scott Harter discusses mitigation funds (please see the video for more details).
- No other General Public Input.
- XIII. Schedule Next Meeting for November 10, 2022.** Scott Harter confirms next meeting date.
- XIV. Adjournment**
Motion– Robert Stark, Second Amar Rao, all in favor (everyone)
Meeting Adjourned at approx. 11:36 AM

Next Meeting scheduled for Thursday November 10, 2022

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