

4.1.2 Concept Testing and Development at the Raft River Geothermal Field, Idaho

Presentation Number: 007

Investigator: Moore, Joseph (University of Utah)

Objectives: Develop and demonstrate the techniques required to form and sustain EGS reservoirs including combined thermal and hydraulic stimulation and numerical modeling. Improve the performance and output of the Raft River geothermal field by increasing production or injectivity.

Average Overall Score: 3.3/4.0

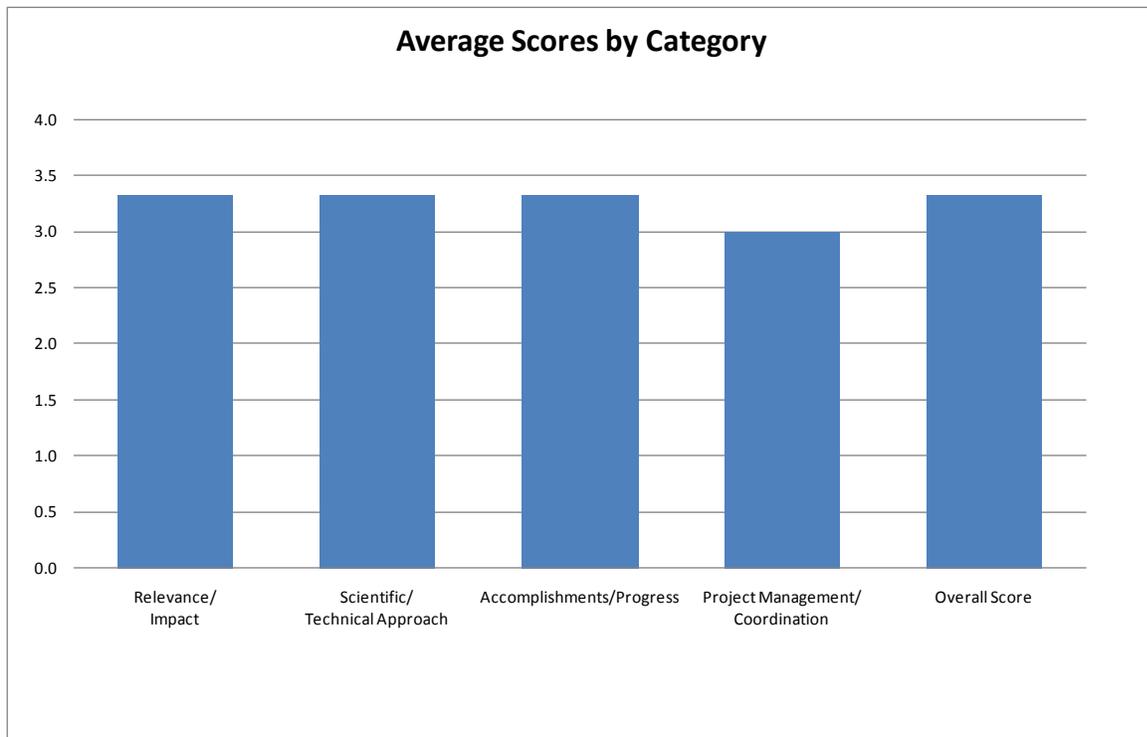


Figure 6: Concept Testing and Development at the Raft River Geothermal Field, Idaho

4.1.2.1 Relevance/Impact of the Research

Ratings of Three-member Peer Review Panel: Good (3), Outstanding (4), Good (3)

Supporting comments:

- A well focused demonstration project that combines good science and engineering with stimulation approaches that if successful will benefit the DOE Geothermal Program
- This project is directly relevant to development of EGS systems in geothermal areas having relatively lower temperatures (~300 °F) and relatively shallow depth (~5,000 ft). Resources having these characteristics have not been extensively developed in the US and comprise a worthy resource base.
- This Raft River EGS demonstration project, if successfully completed, will make an important contribution to the Geothermal Program mission. The project activities will impact, not

necessarily solve, known technical barriers such as how to increase permeability. If this project is successfully completed this reviewer is confident that the EGS program will benefit and that the results will surely add to the knowledge base.

4.1.2.2 Scientific/Technical Approach

Ratings of Three-member Peer Review Panel: Outstanding (4), Good (3), Good (3)

Supporting comments:

- Project appears focused and has sound science and engineering needed to make the demonstration successful.
- The technical approach appears to be sound, although no reasoning is given for the novel stimulation approach and for the other techniques applied. Does modeling or data from other areas suggest that thermal stimulation followed by hydraulic stimulation is a superior method?
- The overall technical approach is good. Applied technology like this is perfectly suited for a demonstration project and does not involve any state-of-the-art R&D. There are adequate resources and more than sufficient rigor of the work elements, procedures and methods that, if followed, will achieve the project objectives. The design of the project is straightforward and deemed reasonable and the technical approach is adequately described and clearly laid-out in the tasks provided and project timeline.

4.1.2.3 Accomplishments, Expected Outcomes and Progress

Ratings of Three-member Peer Review Panel: Outstanding (4), Good (3), Good (3)

Supporting comments:

- Like other projects, this project is only 10% complete due (at least to some degree) by the time it has taken to get through contractual issues. Given the delay the progress is good. An excellent team has been assembled and the path seems well defined.
- The project is only 10% complete – receipt of funding from DOE was delayed somewhat. The team appears to be well prepared to move forward when all permits have been obtained.
- The overall quality of the research team, equipment and facilities is good. Some of the researchers are known to this reviewer and are of high caliber. That being said, relevant experience and the balance of appropriate skills of the research team are unknown given this researcher's knowledge of the majority of the team members. There are several accomplishments to date but the project is, according to my rough calculations, behind schedule (report says 10% scope done in 7 months out of 15 total or 46% schedule = behind schedule by 36%). Was not able to ascertain the accomplishments as compared to costs to date since current costing was not given. Clearly, the bulk of the important activities remain and I could imagine that costs reflect this also. However, according to their schedule they are on schedule.

4.1.2.4 Project Management/Coordination

Ratings of Three-member Peer Review Panel: Outstanding (4), Good (3), Fair (2)

Supporting comments:

- The project manager appears to have been very effective at moving the project forward. In general, more decision points would be advisable but this reviewer believes the path and plan is adequate.
- Appropriate decision points are part of the project plan. The path forward is well planned.
- The technical, policy, business, and spend plans for the project are well thought-out, make sense and are, at least logistically on track and project decisions points are appropriately placed.

4.1.2.5 Overall

Ratings of Three-member Peer Review Panel: Outstanding (4), Good (3), Good (3)

Supporting comments:

- Well managed, focused project. The use of thermal and hydraulic stimulation will be interesting. Since proppant appeared to be successful in the past, the project should consider its use during the hydraulic stimulation. One concern is the pipeline construction. Continued focus needed to make sure the project stays on schedule.
- This project, if successful, will be an important demonstration of EGS reservoir development in lower-temperature igneous rocks.
- Overall, this reviewer recommends that the project proceed. It is recommended that the PI accelerate the tasks to catch-up on schedule variance.

4.1.2.6 PI Response

No response.