



University of Hawai'i at Hilo

640 N. A'ohoku Place, Room 203, Hilo, Hawai'i 96720

Telephone: (808) 933-0734 Fax: (808) 933-3208

Mailing Address: 200 W. Kawili Street, Hilo, Hawai'i 96720

**Minutes
Regular Meeting**

Mauna Kea Management Board
Monday, December 6, 2010

Kukahau'ula, Room 131
640 N. A'ohoku Place
Hilo, Hawai'i 96720

Attending

MKMB: Chair Barry Taniguchi, 2nd Vice Chair/Secretary Ron Terry, Lisa Hadway, Herring Kalua, and Christian Veillet

Kahu Kū Mauna: Ed Stevens

OMKM: Stephanie Nagata and Dawn Pamarang

Others: David Byrne, Mario Calderara, Robert Christensen, John Connelly, Linda Fisher, Cory Harden, Stewart Hunter, Cindy Nomura, Richard Oram, Scotty Paiva, Peter Sur, and Deborah Ward

I. CALL TO ORDER

Chair Taniguchi called the meeting of the Mauna Kea Management Board (MKMB) to order at 10:05 a.m.

II. APPROVAL OF MINUTES

Upon motion by Christian Veillet and seconded by Lisa Hadway the minutes of the November 3, 2010 meeting of the MKMB were unanimously approved.

III. INTERIM DIRECTOR'S REPORT

A. Thirty-Meter Telescope (TMT) Conservation District Use Application (CDUA) Public Hearings

The Department of Land and Natural Resources (DLNR) public hearings on the TMT CDUA were held on December 2nd in Hilo, and December 3rd in Kona. About fifty people presented comments at the Hilo meeting and about 31 at the Kona meeting. The public comment period expired on November 23, 2010. DLNR received 15 comments.

B. Mauna Kea Ranger Program

Recruitment to fill two vacant ranger positions is currently underway. Stewart Hunter and Chief Ranger Scotty Paiva are handling the recruitment process. We hope to have the positions filled by early January 2011.

Chief Ranger Scotty Paiva was introduced to board members. Chief Ranger Paiva shared his thoughts and goals for the ranger program.

IV. KAHU KŪ MAUNA COUNCIL (KKMC)

Ed Stevens reported the Council will not be meeting in December and requested to reserve his comments for the agenda items.

V. OLD BUSINESS

A. Gemini Observatory's Request to Install an Aboveground Diesel Fuel Storage Tank

On September 16, 2008, MKMB was asked to review and approve Gemini's request to install a diesel fuel storage tank at its summit facility. At that meeting MKMB recommended classifying it a minor project subject to additional review. They also requested that Gemini consider mitigation measures as well as alternatives. Gemini re-evaluated the project and resubmitted a revised proposal.

Background

Following the earthquake in 2006 Gemini lost power for more than 16 hrs and some of their science instruments lost cooling and it took two weeks to recover. The current storage tank, which is located inside the support building, has only a 180-gallon capacity which can provide about only 16 hours of emergency runtime. Occasionally the summit experiences bad winter storms which can sometimes last up to three days preventing Gemini staff from going to their summit facility to refill the small diesel tank.

Gemini is seeking to increase the run time of its emergency generator from 16 to 90 hours to allow and prepare for emergencies. In the event electricity is shut off for over 3-4 days and personnel cannot access their facility.

On September 16, 2008, the MKMB recommended classifying this a minor project. On September 24th, President McClain concurred with the MKMB's recommendation.

On October 20, 2010, Gemini submitted a revised proposal including responses to concerns expressed by the MKMB and Kahu Kū Mauna.

Project Summary

Gemini recognized MKMB's and Kahu Kū Mauna's concerns and added additional design feature to ensure spills will be contained and not enter into the ground.

Additional precautionary measures include:

- Placing the storage tank on a rubber-lined concrete containment pad with a curb sufficient to contain the contents of the tank. The pad will extend to the wall of the Gemini facility including the area above which the fuel piping connects to the emergency generator located inside the building.
- Placing a concrete drip pad at the dispensing location
- Piping will contain an expansion joint allowing movement between the storage tank and generator. Piping will also be insulated and electrically heat traced for additional protection from severe cold weather.

At the suggestion of Ron Terry a technical review committee, similar to the design review committee which included local experts, was assembled to review this and another Gemini project. The purpose of the committee is to assist Kahu Kū Mauna, OMKM and MKMB with the technical review of proposed projects. The committee included an engineer, architect with commercial design experience, and an environmental consultant.

The technical review committee offered the following comments and suggestions:

- Use seismic mounting or brackets to hold the tank to the slab.
- Use a monolithic flooring technique to eliminate seams in the concrete containment pad.
- Add a heating system to the concrete floor and rubber lining to prevent freezing and cracking.
- Encase the double wall pipe in a flexible hose to prevent spillage in the event of an earthquake which could shear the pipe.
- Installing some kind of barrier, e.g. chain link fence to prevent flying debris from hitting and breaking the pipes.
- Placing an absorbent pad on the concrete pad at the dispensing site.
- Gemini prepare a plan on how they will handle spills.
- Gemini's proposed use of a tanker truck to deliver the diesel is safer than the current practice which is transporting 55-gallon cans of diesel fuel in the back of a pick-up truck.
- Gemini's proposed activities and safety features are above code.

Kahu Kū Mauna Council

The Council appreciated Gemini making the effort to do additional “homework”, taking additional steps and adding design features which they felt addressed their concerns. They expressed no objections to the project.

DLNR Permit/Approval

If this project is approved by the President, the applicant will submit a request to DLNR for a permit.

OMKM Recommendation

This project has already been classified as a Minor Project. OMKM’s position is that the Board recommend to the UHH Chancellor to forward a recommendation to approve to the President. OMKM’s recommendation is based on the following:

- The proposed activity does not significantly impact the surrounding environment.
- The proposed structure will be installed on previously disturbed ground.
- No excavation is involved.
- There are no archaeological sites near the proposed site.
- The equipment is a needed safety measure.

Conditions

OMKM recommends the following conditions:

1. Submit copies of correspondence between the applicant and DLNR.
2. If a DLNR permit is issued submit a copy to OMKM.
3. If applicable, comply with conditions of the DLNR Permit.
4. Notify OMKM when it will commence summit construction activities.
5. Gemini shall implement the following mitigation measures:
 - Gemini shall ensure that loose tools or equipment are not left on the job site at the end of each day by its contractor or by Gemini staff.
 - In the event of high wind conditions precautions will be taken to prevent debris from being blown from the job site.
 - All waste material generated will be removed and disposed of properly.
6. Gemini should consider adopting measures suggested by the technical review committee.
7. Allow OMKM rangers to visit and monitor installation activities.
8. Notify OMKM upon completion of the project.

Discussion

Mario Calderara, Gemini Telescope site manager, was available to answer questions of the Board.

On behalf of the Council, Ed Stevens commended Gemini for responding to their safety concerns, which they did an outstanding job. Mr. Stevens stated he would like to see Gemini’s report regarding all of the safety issues made into a procedure manual for the mountain. It would be an excellent template for future requests. Additionally, he feels the aboveground system is much safer than the underground system.

Mr. Stevens asked who would initiate the task of putting together the procedure manual. Chair Taniguchi responded this particular matter is not an agenda item and the Board cannot bring it up for a decision now. He recommended that Interim Director Nagata prepare something for the next Board meeting.

Ron Terry stated the technical design review committee would function as a standing committee rather than an ad hoc committee. The intention is to have the committee available for anything that was moderately complex. Dr. Terry stated he would like this to be an official policy of the Board. Dr. Terry thanked Nimir Tamimi, Scott Fleming, and Evan Pfaff for serving on the committee.

Lisa Hadway stated that diesel fuel has a life span and asked how Gemini plans to maintain the fuel. Mr. Calderara replied they will be circulating the fuel to keep algae from growing.

Action

It was moved by Ron Terry and seconded by Christian Veillet to accept OMKM's recommendation that UH Hilo Chancellor forward a recommendation to approve to the President with conditions as noted. The motion was carried unanimously.

VI. NEW BUSINESS

A. Gemini Observatory's Request to Install Underground Earthquake Ground Acceleration Sensors

On May 5, 2010, Gemini submitted a proposal to install underground earthquake sensors on its property. Kahu Kū Mauna expressed concern that other observatories might also want to install this type of equipment resulting in a proliferation on the summit. Kahu Kū Mauna asked Gemini if these sensors could be shared and used by other observatories. On October 29, 2010, Gemini resubmitted their proposal for approval.

Background

Gemini telescope responds to ground motion resulting from earth movements. If the magnitude is small it could result in image jitter rendering the data a potential loss. If the magnitude is large it could result in damage to the observatory system and potential injury to summit personnel. The probability of high magnitude earthquakes on the island is relatively high.

Currently one has to access the US Geological Survey website for information about earthquake and speculate about the level of ground motion at the summit. Installing a ground acceleration sensor on property would eliminate guesswork. The sensor would measure the on-site acceleration from any nearby earthquake.

Information from the sensor would provide information to the summit personnel and would trigger immediate action such as automatic shutdown of sensitive instruments. If the magnitude is large, it will sound visual and audible alarms directing personnel to execute safety procedures and evacuate.

The 2006 magnitude 6.7 earthquake caused damage to the Secondary Mirror Support System. The damage was to fragile parts located deep within the equipment and was not visible until staff attempted the start-up of the equipment.

Since the time of the earthquake Gemini has installed many acceleration sensors throughout the telescope structure and foundation. A critical part of this sensor system is a ground motion reference set placed outside the building in a small underground enclosure.

While some of the other observatories have expressed interest in this system, they cannot have access to data in real time because the data travels from the sensors to the data acquisition computer by cable. The data acquisition computer reads data from the facility's internal sensors and the outside ground motion sensor. In addition, other facilities would need to install similar acceleration sensors throughout their facilities.

Project Summary

Gemini proposes to install a system of three accelerometers in a sealed enclosure outside their facility. The enclosure will be buried approximately two feet underground and about 50 feet northeast of their telescope building. The three accelerometers will be bonded to an aluminum block which will sit on a 6" thick concrete block encased in a PVC pipe (15" diameter and 12" tall.). The PVC pipe will be capped on both ends. The conduit containing the data cable is 1" in diameter and will connect the sensor to a junction box adjacent to the cargo door.

Trenching will be on previously disturbed ground and will be done manually using hand tools. A small hand-held gas powered compactor will be used to backfill and resurface the ground.

The technical review committee offered the following comments and suggestions:

- The location of this equipment should be part of the facility's overall site drawing and included in the telescope decommissioning actions.

Kahu Kū Mauna Council

The Council appreciated Gemini's explanation for the reason why this sensor system could not be shared by other observatories. They requested that the construction/trenching activity be monitored by the rangers. Kahu Kū Mauna did not have objections to this project.

DLNR Permit/Approval

If this project is approved by the MKMB, applicant shall submit a request to the DLNR for a permit.

OMKM Recommendation

OMKM recommends that the Board classifying this as a Minimal Impact project, approve it, and allow Gemini to proceed. OMKM's recommendation is based on the following:

- The proposed activity does not significantly impact the surrounding environment.
- The proposed structure will be installed on previously disturbed ground.
- Minimal excavation is involved.
- There are no archaeological sites near the proposed site.
- The sensors provide added safety measures to the Gemini's operations.

Conditions

OMKM recommends the following conditions:

1. Submit copies of correspondence between the applicant and DLNR.
2. If a DLNR permit is issued submit a copy to OMKM.
3. If applicable, comply with conditions of the DLNR Permit.
4. Notify OMKM when it will commence summit construction activities.
5. Gemini shall implement the following mitigation measures:
 - Gemini staff will ensure no loose tools or equipment are left on the job site at the end of each day.
 - In the event of high wind conditions precautions will be taken to prevent debris from being blown from the job site.
 - All waste material generated will be removed and disposed of properly.
6. Gemini should consider adopting measures suggested by the technical review committee.
7. Allow OMKM rangers to visit and monitor installation activities.
8. Notify OMKM upon completion of the project.

Discussions

Mr. Stevens commented that Gemini answered the Council's concern regarding proliferation on the mountaintop. Gemini's response was that they could not make a common area due to the distance involved between Gemini and the others. Is this hard wire for the connection and does it have anything to do with fiber optic circuits? Richard Oram, laser optic engineer and technical staff for this project, replied the connection is a small diameter cable. Gemini plans to make the information available as it comes in on a website. This could be shared with anyone who is interested.

Mr. Stevens commented that when he reviewed the proposal and looked at the distances and technical aspects of the circuitry, he does not have a concern with others putting in the same system. It can be totally independent of each other. Because of the way it is designed and if others follow the same suit, it would not be a proliferation.

Deborah Ward stated that this is already a disturbed area, but is there a burial treatment plan in place for this area in case there should be any discovery? Interim Director Nagata stated no, there isn't one. Ron Terry questioned the preparation of a burial treatment plan if there are no iwi. He has never heard of a need for that.

Chair Taniguchi suggested amending the condition to add if there is any discovery of burials the project will immediately stop work and take appropriate steps. Dr. Terry stated it should be a standard condition of any trenching that goes on. If it is not, it should be.

Cory Harden understands that the information will be shared with other observatories via Gemini's website so that way you do not need to send wires to all of the observatories. That thought has not been finalized and is still up in the air. Dr. Terry stated that he assumed that one of the reasons for not running wires all around the summit was that some of the information is customized for Gemini and that the acceleration movement is not going to be as useful for other observatories because it is hooked up to individual parts in Gemini's observatory.

Mr. Oram replied the main purpose for this is to get local seismic information so Gemini can use it to perfect its model. They have already instrumented the inside of their telescope with numerous accelerometers. It is the coupling of the outside local seismic influence with the various accelerometers that they are seeking to better understand what the triggering levels are for various shutting down of sensitive equipment. Gemini is open to sharing the seismic data on its website to anyone, but how useful it will be for others is difficult to determine. Gemini will use it for real time shut down activities.

Action

It was moved by Herring Kalua and seconded by Ron Terry to accept OMKM's recommendation to classify this as a Minimal Impact project along with the conditions amended to include steps regarding any burial discovery, allowing Gemini to proceed and recommend approval contingent on approval or receipt of a permit from DLNR.

Dr. Terry amended the conditions and added that the data produced by this instrument be made available to OMKM whether there is a website or not.

The motion was carried unanimously.

B. Mauna Kea Observatories Support Services (MKSS) Request to Install Guardrails around Culverts on the Summit Access Road

MKSS is requesting approval to install guardrails alongside two culverts on the summit access road as precautionary safety measures to prevent future accidents.

Background

At different times of the year the azimuth of the setting sun aligns almost perfectly with two sections of the summit access road causing short periods of severe impairment to the vision of uphill drivers. In September 2010, on consecutive weekends, a vehicle ran off the road (mauka side) and partially turned over in the culvert below the second switchback which is located just above the 1-mile marker. A review of the records found an additional culvert located just above the third switchback (below the 3 mile marker) had similar accidents.

MKSS is proposing to install approximately 50 linear feet of guardrails at the two culverts where accidents occurred. The guardrails will be field bent radius rails that will terminate away from oncoming traffic at both the trailing and leading ends. Double nested rails protecting the culvert headwall area will be installed as needed to provide maximum travel way. Double nested is defined as W-beam guardrails that are overlapped to provide additional strength and rigidity when I-beam posts cannot be driven into the ground due to an obstruction. In this case, the concrete culvert pipe prevents putting in an I-beam. MKSS will also need to construct an additional shoulder at the upper end of Site 1 to put in a post. Guardrail installation will meet or exceed Hawaii Standard Specifications for Road and Bridge Construction (version 2005) and will be in accordance with Federal Highway Administration guidelines and requirements governing guardrail installation.

Kahu Kū Mauna

Kahu Kū Mauna felt this was a safety issue and endorsed this request. They suggested that there should be signs notifying the public about the road condition hazard. They also felt that the guardrails should not be painted to blend in with the surroundings, but should be visible so drivers can see them. If reflectors are added, they should be kept to a minimum.

DLNR Permit/Approval

If this project is approved by the MKMB, MKSS shall submit a request to DLNR for a permit.

OMKM Recommendations

OMKM recommends that the Board classify this as Minimal Impact, approve it, and allow MKSS to proceed. OMKM's recommendation is based on the following:

- The proposed request is necessary to provide additional safety measures along the summit access road to prevent future accidents.
- The proposed activity does not significantly impact the surrounding environment.
- The proposed structure will be installed on previously disturbed ground.
- Excavation is not involved.
- There are no archaeological sites near the proposed site.

Conditions

OMKM recommends the following conditions:

1. Submit copies of correspondence between the applicant and DLNR.
2. If a DLNR permit is issued, submit a copy to OMKM.
3. If applicable, comply with conditions of the DLNR Permit.
4. Notify OMKM when it will commence summit construction activities.

5. MKSS shall implement the following mitigation measures:
 - MKSS will ensure no loose tools or equipment are left on the job site at the end of each day.
 - In the event of high wind conditions precautions will be taken to prevent debris from being blown from the job site.
 - All waste material generated will be removed and disposed of properly.
 - Install warning signs at appropriate locations.
 - The installation of reflectors on the guardrails will be kept to a minimum, but sufficient to provide necessary safety functions.
6. Allow OMKM rangers to visit and monitor installation activities.
7. Allow Notify OMKM upon completion of the project.

Action

It was moved by Herring Kalua and seconded by Christian Veillet to accept OMKM's recommendation to classify this as a Minimal Impact project allowing MKSS to proceed and recommend approval contingent on approval or receipt of a permit from DLNR.

Discussions

Lisa Hadway asked if MKSS staff would be doing this or will a contractor be hired? Stewart Hunter replied GPS Contracting will be doing the work with assistance from MKSS staff.

Ms. Hadway recommended amending the motion to add a condition that the contractors are subject to the Comprehensive Management Plan invasive species cleaning. Interim Director Nagata commented that was part of the request from MKSS to the contractor.

The motion was carried unanimously.

VII. ANNOUNCEMENTS

Scotty Paiva introduced John Connelly, committee representative for the Big Island for the Employer's Support of the Guard and Reserve, an agency under the Department of Defense under Homeland Security. He is here to present a patriot award to both Interim Director Nagata and Stewart Hunter for their support. Chief Ranger Paiva explained he is a Coast Guard reservist and he had the fortunate opportunity to participate in the oil spill clean up in the Gulf of Mexico. During his 60 days there, Interim Director Nagata and Mr. Hunter supported and kept in contact with him making sure he was aware with what was happening regarding work back home.

VIII. NEXT MEETING

The next meeting is tentatively scheduled for Tuesday, January 18, 2011.

IX. ADJOURNMENT

There being no further business, Chair Taniguchi adjourned the meeting at 10:50 a.m.

Respectfully submitted:

Signed by Dr. Ron Terry
Dr. Ron Terry, Secretary, MKMB

1/18/11
Date