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Class Specifications
for the Class:

GEOTHERMAL COMPLIANCE SPECIALIST
(GEOTHERMAL COMPLIANCE SPCLT)

Class Distinguishers:

Complexity: This class reflects responsibility for reviewing/revising and recommending approval of geothermal resource development plans and permits, and monitoring geothermal activities to ensure that operations: 1) are in compliance with pertinent laws, rules and regulations, permit conditions and industry practices; 2) are optimally efficient in the utilization of the geothermal resource and do not impact other existing resources; and 3) do not endanger the safety of the public.

Personal Contacts: Works with the geothermal project developer (e.g., site manager) to resolve areas of concern with geothermal plans and activities. Serves as liaison with representatives from various federal (e.g., Environmental Protection Agency), State (e.g., Department of Health, Department of Labor and Industrial Relations) and county agencies (e.g., County of Hawaii Planning Department and Hawaii County Civil Defense) and others in evaluating and mitigating, if necessary, potentially hazardous conditions which may arise from geothermal activities. Consults with other agencies and industry representatives on technical geothermal matters.

Full Performance Knowledge and Abilities: *(Knowledge and abilities required for full performance in this class.)*

Knowledge of: State laws, rules, and regulations relating to geothermal development activities and operations; geothermal drilling and exploration, terminology and practices (e.g., geothermal well design and drilling; well control/blowout prevention; power generation; sampling and testing methods, procedures and implications of test results; hazards/effects of emergency situations, e.g., well blowout, hydrogen sulfide leaks; safety precautions); common geological surface and sub-surface formations (e.g., fault zones, rock and mineral types) and their geothermal implications; elements and characteristics of geothermal energy (e.g., temperature profiles, pressure gradients, steam properties); sources of literature and other information relating to geothermal well field development; construction methods and practices; engineering methods, terminology and practice; mathematics; and report writing.

Ability to: Identify common geological formations, gases and chemicals related to geothermal energy; recognize implications of changes in geothermal resource characteristics; conduct sampling procedures on geothermal fluids and/or gases; read and interpret

rules and regulations and evaluate geothermal plans and specifications; deal tactfully and communicate effectively with representatives from various organizations and agencies; evaluate data; and prepare reports and correspondence.

Examples of Duties: *(Position may not be assigned all of the duties listed, nor do the examples necessarily include all the duties that may be assigned. The omission of specific statements does not preclude management from assigning such duties if such duties are a logical assignment for the position. The classification of a position should not be based solely on the examples of duties performed.)*

1. Independently inspects and monitors geothermal development activities and operations. Works with the geothermal project site manager to resolve areas of concern with geothermal plans and activities. Notifies appropriate agencies if unusual/potentially hazardous conditions arise.

2. Evaluates subsurface geologic/geothermal formations based on prior well data (e.g., temperature, pressure, formation type, density, etc.) as well as data collected from samples and tests of drill cuttings obtained during the drilling of new wells. Monitors sampling and testing methods and protocol, and may recommend revisions if necessary.

3. Monitors wellhead equipment, analyzes temperature, pressure and composition of well fluid data to make assessments of the resource and operational situation.

4. Monitors the conduct and reviews the results of downhole diagnostic tests related to assessing geologic formations, quantity and quality of the geothermal resource, fluid temperature, pressure, etc. Ensures that tests are conducted properly and that geothermal activities are conducted appropriately based on test indications.

5. Analyzes temperature and pressure profiles related to geothermal gradients, depths and formation pressures, based on knowledge of geothermal resource behavior and subsurface conditions. Performs calculations to evaluate downhole reservoir conditions.

6. Reviews for compliance with pertinent rules and regulations, recommends revisions as necessary, and recommends approval of geothermal development Plan of Operations (equipment configuration, operating parameters, emergency response plans, monitoring plans, well testing plans and methods) and various permits (e.g., geothermal exploration, well construction/drilling, casing/cementing designs, corrosion mitigation, blowout prevention plans/testing, well

modification, well abandonment) required to conduct geothermal activities. Assesses potential impacts of the proposed activity on the resource and the environment; ensures that drilling methods and well control techniques are appropriate and that adequate safety precautions are implemented.

7. Reviews groundwater and geologic data collected (depth, flow, formation type, etc.) and proposed drilling methods and procedures, and assesses potential impacts to underlying groundwater resources resulting from geothermal well drilling activity.

8. Reviews and recommends approval of well drilling and mud designs to control fluid temperatures and pressure. Performs analysis/calculations to assess subsurface temperature and pressure conditions to determine mud requirements. Recommends changes to well drilling and mud designs as necessary.

9. Reviews and recommends approval of casing and cementing requirements to meet acceptable industry standards, including corrosion mitigation plans for well casing and wellheads.

10. Reviews plans for and witnesses the conduct of casing tests such as pressure testing of blowout prevention equipment. Evaluates existing equipment and configuration; and may participate in the development/revision of testing requirements and methods.

11. Reviews and recommends approval of blowout prevention equipment configuration and testing which may differ from well to well. Determines whether proposed equipment and configuration are appropriate for a particular well site, and recommends changes as necessary.

12. Reviews and recommends approval of well completion plans, including but not limited to well casing program, well casing specifications (i.e., type of casing, size, solid/perforated, etc.). Evaluates compatibility of subsurface conditions with proposed specifications relative to public safety and protection of the resource and recommends changes as necessary.

13. Reviews and recommends approval of production/injection well monitoring programs such as annular pressure monitoring to test the integrity of the wells. Determines whether monitoring programs and testing methods are appropriate, and recommends changes as necessary.

14. Reviews and recommends approval of well modification plans related to redrilling, repairing, recasing or abandonment of wells. Reviews existing well design and subsurface conditions and assesses proposed actions and procedures. Recommends changes as necessary.

15. Coordinates the review and approval of permits and emergency response plans as they relate to pollution of surface water and groundwater resources; damage to fish, wildlife or other resources; and hazards to public health and safety in coordination with pertinent federal, State and county agencies. Assesses potential impacts and recommends changes to mitigative/preventive measures, as necessary.

16. Reviews and evaluates monthly production data and injection well reports. Evaluates resource consumption rate vs. energy produced, cognizant of facility efficiency and operating conditions. Discusses corrective actions and safety precautions necessary for the optimum utilization of the resource with the geothermal site manager.

17. Prepare reports, correspondence and memoranda regarding geothermal activities and operations.

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This is the first specification for the new class GEOTHERMAL COMPLIANCE SPECIALIST (GEOTHERMAL COMPLIANCE SPCLT).

Effective Date: 7/16/96

DATE APPROVED: 4/4/97 /s/ James H. Takushi
JAMES H. TAKUSHI
Director of Human Resources Development