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Oilfield Testing
CENTER

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RIG NO. 1 UPGRADES - PHASE 2

As the oil and gas industry continues to drill in more remote areas, at deeper depths, and in more challenging environments, the advancement of oil and gas related technology to meet these increased demands is required. In response, RMOTC has committed a significant portion of its budget to upgrade several items on its existing drilling rig at Naval Petroleum Reserve No. 3 (NPR-3).

Many of the upgrades took place in Phase 1 and included the following:

- **Pipe spinners**
These smaller, lighter spinners will result in increased safety as they are more manageable by rig personnel.
- **Shale shakers and mud cleaners**
The new system will keep drilling mud clean and the mud weight consistent throughout drilling.
- **Upgrade pumps**
Two Gardner Denver PZ-9s and a new 7" fluid end will allow pump rates up to 650 GPM. Belts on the OPI pump will also be changed to achieve better efficiency.

- **Mud tanks with agitators**

A new 800-barrel system capable of handling up to 1,000 GPM will be installed.

- **Upgrade generators**

The new shale shakers and mud cleaners require more power, therefore the generators will be upgraded.

The following rig upgrades are scheduled to take place in Phase 2:

- **Heavyweight drill pipe (HWDP)**

RMOTC will purchase 600 feet of 4-1/2" HWDP, especially useful for rotary steerable system (RSS) tests.

- **Rig up truck**

A truck on site will allow for greater flexibility and more timely rig moves as trucking companies' availability will no longer be a concern. RMOTC staff will also have more flexibility in adjusting to weather conditions and manpower during rig moves, thereby increasing safety.



Office of Fossil Energy