

## Crane Operations in Hostile Environments

Title 10 C.F.R. § 851.23(a)(3) requires DOE contractors performing work at DOE sites to comply with the Occupational Safety and Health Administration's (OSHA) regulations at 29 C.F.R. Part 1910, excluding § 1910.1096, *Ionizing radiation*. Title 29 C.F.R. § 1910.179(j) requires frequent and periodic inspections of cranes, with their frequency dependent upon the nature of critical components of the crane and their exposure to wear, deterioration, or malfunction. In addition, 29 C.F.R. § 1910.179(l)(1) requires the establishment of a preventive maintenance program based on the crane manufacturer's recommendations. There have been several recent inquiries as to whether a variance from the prescribed requirements of 10 C.F.R. Part 851 is needed for crane operations in "hostile environments" as described in Chapter 5 of DOE-STD-1090-2007, *Hoisting and Rigging*.

As explained in § 5.1 of DOE-STD-1090-2007, "hostile environments [exist] where standard operating, maintenance, inspection, or test procedures cannot be followed as a result of radiation or radioactive contamination, toxic/hazardous chemicals or gases, or temperature extremes. Hostile environments are environments that have been rendered inaccessible to workers during hoisting or rigging operations due to these health hazards." Title 10 CFR § 851.32(d)(1) provides for treatment of violations of Part 851 safety and health standards as *de minimis* and, therefore, not requiring a variance, where the "deviation from the requirement of a standard [] has no direct or immediate relationship to safety or health and no enforcement action will be taken." In the event of crane operations in hostile environments, compliance with the DOE-STD-1090-2007 Chapter 5 methodology, including conformance with an approved Hostile Environment Plan in lieu of the 29 C.F.R. § 1910.176(j),(l) requirements, will be deemed "*de minimis*" violations of Part 851 and, therefore, variances will not be required. (See 10 CFR 851.32(d)(1))

The Hostile Environment Plan must provide for compensatory measures to address those specific inspection and maintenance requirements that cannot be achieved due to the hoisting equipment's operating environment. These compensatory measures must account for any increased operational risk associated with deviations from prescribed inspection and maintenance requirements. For example, to address environmental conditions that effectively preclude frequent inspections of slings, hooks or rigging hardware or periodic maintenance of certain crane components due to the likelihood of excessive employee radiation exposure, these items might be subject to increased scrutiny or possible replacement each time a crane is removed from the hostile environment for a periodic inspection.

A Hostile Environment Plan applies only to those hoisting and rigging activities that are deemed unreasonable or impossible by virtue of hazardous environmental conditions. All other operational requirements that are feasible in such environments must be performed in strict accordance with applicable OSHA standards. In all such cases, the hostile work environment must be rendered inaccessible to employees during crane operations.

Hostile Environment Plans must be reviewed and approved in accordance with the applicable provisions of Chapter 5 of DOE-STD-1090. Approved plans must also be furnished to the DOE Site Office as well as employees and other site organizations affected by the plan.