

National Aeronautics and
Space Administration
Headquarters
Washington DC 20546-0001



Reply to the Attn of:

QS

APR 30 2001

TO: Directors, NASA Centers
Director, Jet Propulsion Laboratory

FROM: Q/Associate Administrator for Safety and Mission Assurance

SUBJECT: Non-Flight System Safety

The purpose of this memorandum is to bring to your attention problems identified during the Critical Facilities Maintenance Assessment (CFMA) and our Process Verification (PV) reviews. Specifically, we observed many gaps in the application of the system safety discipline in the design of non-flight systems such as ground support hardware, components of the critical infrastructure, prototype systems, and facilities usage and modification.

The CFMA panel found that there were no analyses available upon which to build maintenance programs. They recommended that the system safety analyses be performed for existing facilities. The point that should not be lost is that the analyses also need to be developed for all new capabilities.

For other non-flight systems and activities, we often observed during our PV reviews situations where the "system safety" staff works on "programs/projects." The "institutional safety" staff review the Center buildings to make sure that what was built/fabricated conforms with regulatory and NASA compliance standards. The problem is that there are often no compliance standards for much of what we create. Therefore, the things that we create may have inherent system hazards that, if left undetected, could harm our people, hardware, or buildings.

The reason for this condition most often is jurisdictional underlap. The system safety people focus on the project hardware, but may not be explicitly chartered to look at the facility or test cell with which the hardware will interact. Similarly, the Institutional safety staff may perceive that their charter is to provide their services only to the outside wall or, when inside the wall, look only for occupational safety discrepancies.

At your next local executive safety meeting, we recommend that you discuss how your people employ system safety on all of your potential sources of harm. Some of you will be comforted to reaffirm that all bases are covered by the classical system safety hazard analyses processes. Others may be somewhat disconcerted to learn that they have no clearly delineated process to assure that each and every one of their systems has been analyzed to detect hazards and manage safety risks. What you don't know can (and, sooner or later, probably will) hurt you. Mission success starts, in this case, with system safety.

Frederick D. Gregory