

GUIDELINE	PERFORMANCE	EXCEPTIONS & DEVIATIONS
<p>1. Components Requiring Independent Verification</p> <p>Components that ensure safe and reliable operation, as determined by safety analysis, should receive independent analysis in accordance with the following requirements:</p> <p>a. Safety-Related Systems Not required if:</p> <ul style="list-style-type: none"> • Mispositioning would not affect the system performance • Mispositioning would be immediately known to operator • Independent verification would involve significant radiation exposure <p>b. Non-Safety Related Systems Independent verification would be appropriate if mispositioning could lead to unplanned shutdowns, challenges to safety systems, or cause the release of radioactive or hazardous material.</p>	<p>1. Components Requiring Independent Verification</p> <p>Safety significant structures, systems and components at the accelerator complex include:</p> <ul style="list-style-type: none"> • PLC based Personnel Protection System (PPS) • Radiation shielding and beam dumps • Radiation monitor system • Fire suppression and alarm systems • Oxygen monitors in the accelerator <p>a. The access control systems have dual, independent and fail safe "critical" devices that are used to block beams or switch-off beams. Mis-positioning of these critical devices would affect performance, and in some cases would not be immediately detected by an operator. Independent functional verification of these systems is performed every six months. See for example, OPM 3.A-7.4. Shielding and beam dumps are independently verified by fault studies. See OPM 2.H-16. The radiation monitor system is independently verified by the ASD Protection Systems Group prior to each running period, see OPM 3.A-7.4. "Procedure For a Functional Test of the Chipmunk Computer Interface." Fire Alarm Technicians in the Conventional Facilities Division independently verify the fire suppression/alarm systems. See OPM 2.J-2.</p> <p>b. Non-safety related systems include:</p> <ul style="list-style-type: none"> • Vacuum System • Beam Instrumentation • Cooling Systems • Compressed Air Systems • Cranes <p>Operators or systems specialists verify the position of non-safety-related systems during running periods. The Mechanical Engineering Group and the Conventional Facilities Division monitor cooling systems and compressed air systems. Mispositioning of cooling systems could lead to unplanned shutdowns.</p>	<p>1. Components Requiring Independent Verification</p> <ul style="list-style-type: none"> • None.

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<p>2. Occasions Requiring Independent Verification</p> <ul style="list-style-type: none">• Returning equipment to service after maintenance.• Removing equipment from service.• Periodic checks during normal operation	<p>2. Occasions Requiring Independent Verification</p> <ul style="list-style-type: none">• Equipment startup procedures cover check out or start up of systems. See OPM 6.M "Recovery of Operation (after interruption• Equipment shutdown procedures include for example OPM 5.C "Safety Shutdown Guidelines and Procedures."• Periodic checks during normal operations are made by the ASD Watch personnel in experimental areas or by the Radiological Control Technicians for the accelerator areas.	<p>2. Occasions Requiring Independent Verification</p> <ul style="list-style-type: none">• None.

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<p>3. Verification Techniques - General Guidelines</p> <p>a. Independence Should be conducted in a manner to identify the component, its required position and actual position.</p> <p>b. Remote Position Indicators Perform check local to the device, unless precluded by ALARA.</p> <p>c. Process Parameters Should not be used as the only indication of a components' position. A review should be made to determine when these parameters would be acceptable.</p> <p>d. Throttled Valves Position indicators should be used in conjunction with observing the actions of valve actuator to proper verification.</p> <p>e. Surveillance Testing Independent verification should be used only when proven to satisfy independent verification requirements.</p> <p>f. Operation Self-Appraisal and Verification Should be performed periodically to ensure that the ES&H considerations, and operations functions are being conducted in accordance with established criteria.</p>	<p>3. Verification Techniques - General Guidelines</p> <p>a. Specific examples of independent verification techniques may be found throughout the OPM. See OPM 2.H-7.3 "Inspection of Radiological Fencing".</p> <p>b. Position indicators are checked local to the device. For example, access control gates are reset locally.</p> <p>c. Process parameters, such as radiation monitor set points, are reviewed by the Radiation Safety Committee to determine acceptable set points (see OPM 2.H-7.1)</p> <p>d. Not applicable.</p> <p>e. Not applicable.</p> <p>f. Operation self-appraisal and verification are performed periodically to ensure that the ES&H considerations and operations functions are being conducted in accordance with established criteria. See OPM 9.D-1.8, "ORNL SBMS Subject Area: Self-Assessment" and OPM 9.D-1.1, "ORNL SBMS Subject Area: Performance Planning and Assessment."</p>	<p>4. Verification Techniques - General Guidelines</p> <ul style="list-style-type: none"> • None