

Critical Utilities Infrastructure Revitalization

Quality Assurance

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CUIR Industry Day
29 January 2024

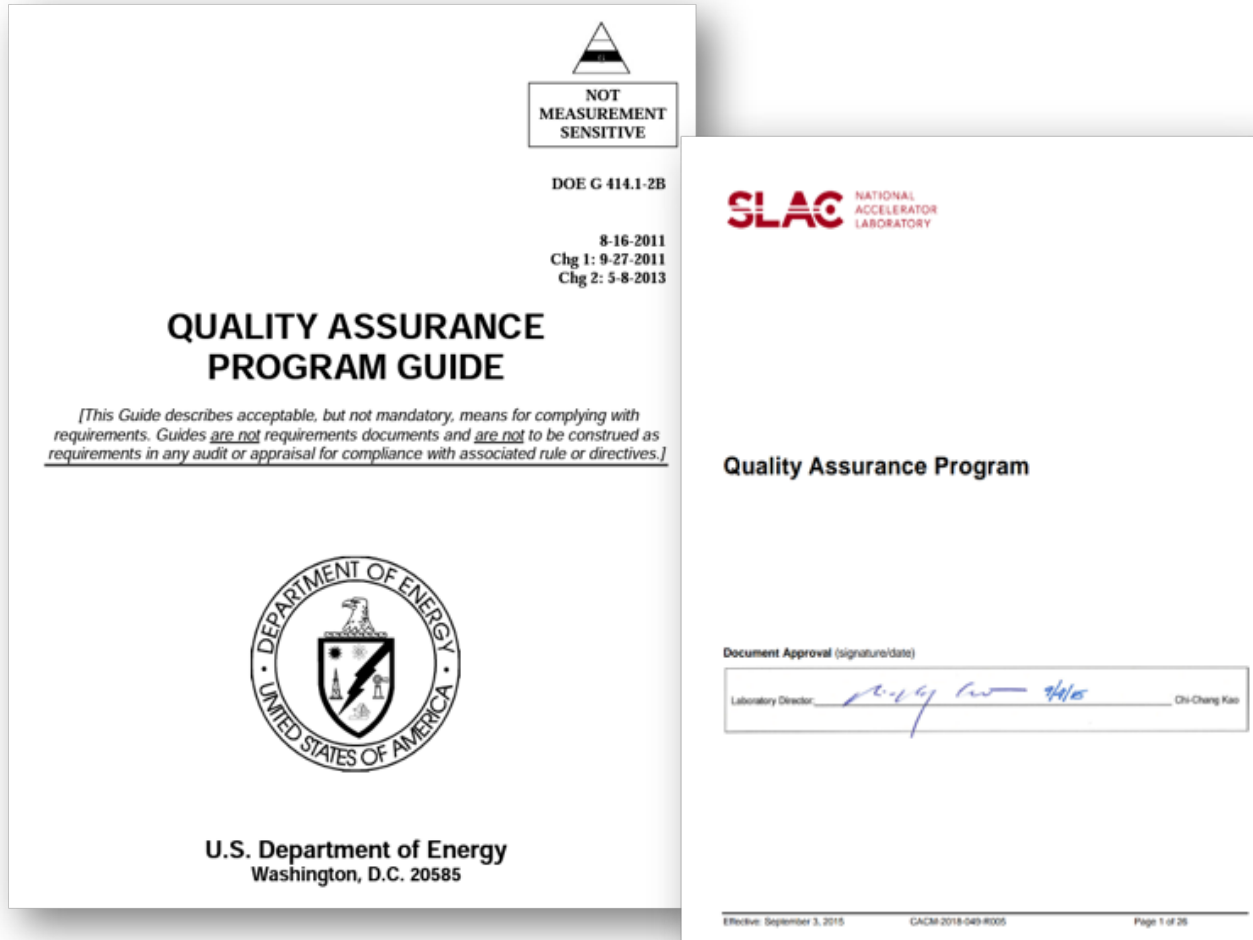
Outline

- Quality Assurance
- Quality Supervision

Quality Assurance

Quality Assurance

Flow down of DOE Order 414.1D Contract Requirements



10 CFR 830, Subpart A
Quality Assurance Requirements

DOE Order 414-1D
Quality Assurance Order

SLAC
Quality Assurance Program

Project
Local QAP

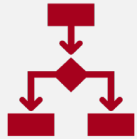
Subcontractor
QA/QC

Quality Assurance



1) QAP, PIM, and CM Manual Implementation

- Management: Program, Structure, Processes
- Performance: Design



2) Process Improvement and Workflows

- Management: Document and Records
- Performance: Work Processes



3) Qualifications and Training

- Management: Personnel Training and Qualifications
- Performance: Inspection and Acceptance Testing



4) Quality Supervision, Walkthroughs, and Assessment

- Performance: Procurement, Integration, Evaluation & Acceptance
- Assessment: Internal and Independent

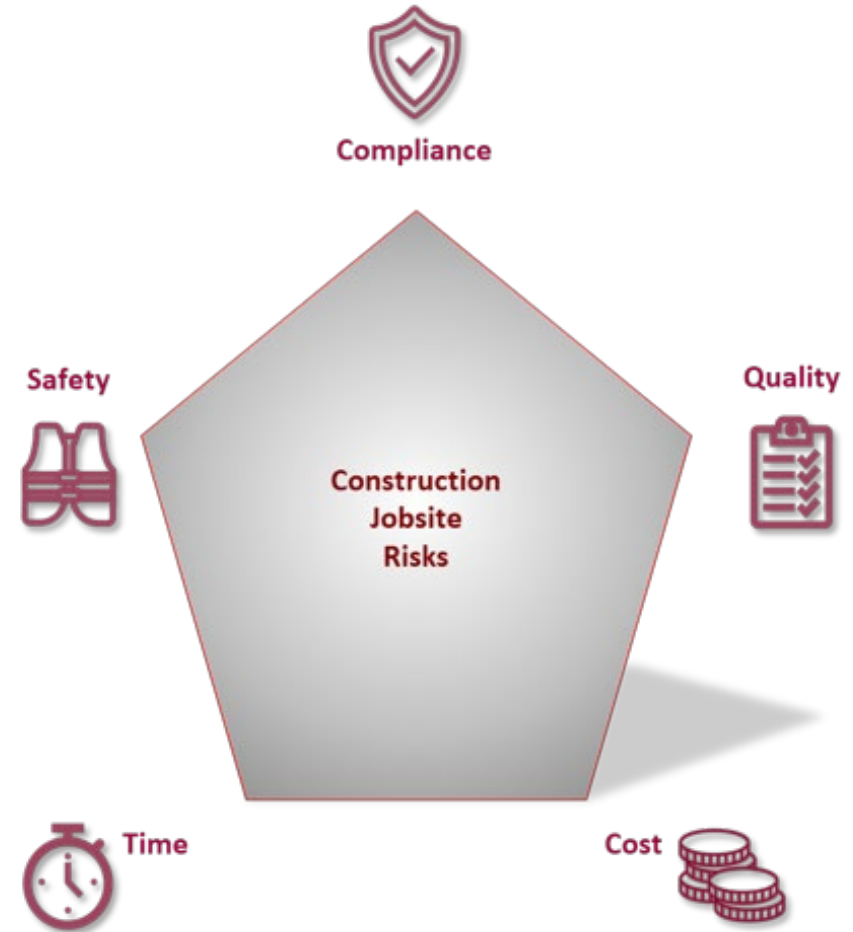
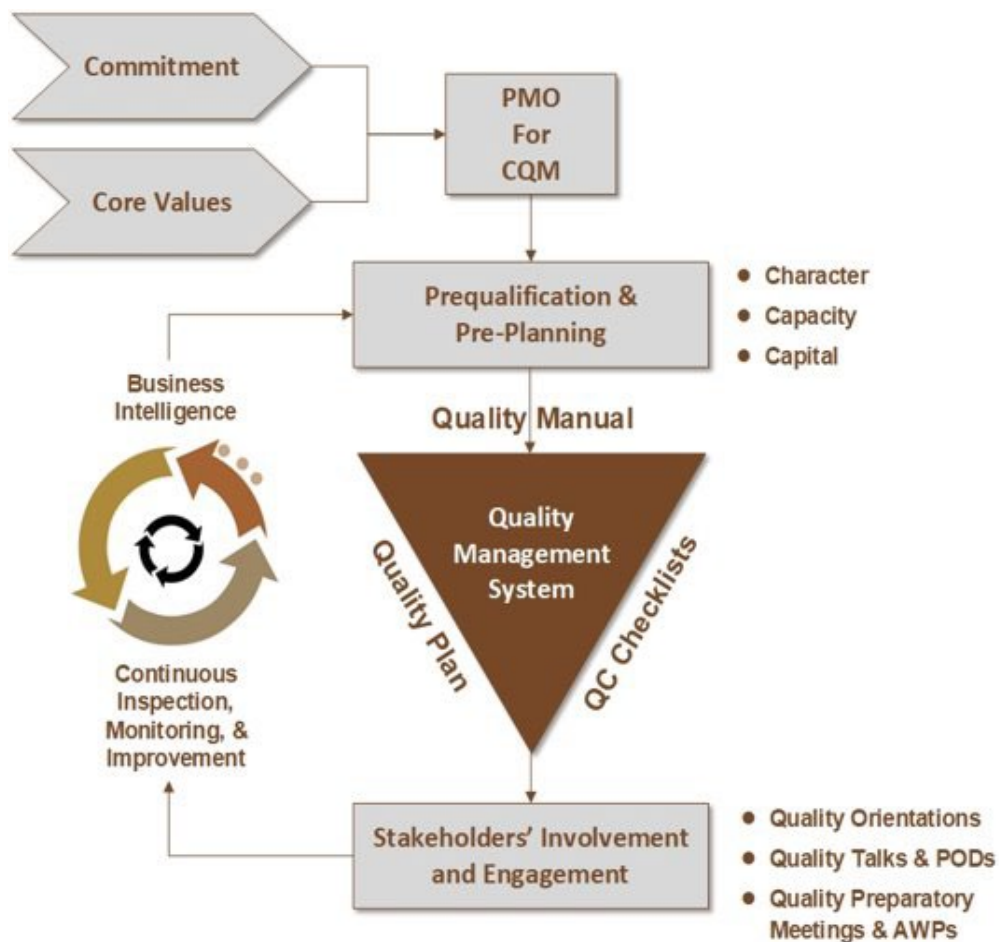


5) Quality Culture & Mindset

- Management: Quality Improvement
- Performance: Applying Lessons Learned

Quality Management System (QMS)

Reinforcing the QA/QC in the Field & During Execution



Quality Assurance Criteria

	Performance Area	Metric	Key Indicator
Mandatory	Quality Management System	Documented Procedure for QC and QA	Manual, Plan, Checklists
	Personnel Organizational Chart	Same person can't be both QC and QA	Qualification & Certifications
	Authority & Stop Work	QA Manager Point of Contact	Direct to Senior Management
	Corrective Action Program	Validation & Verification & Correction Process	Workflow & Documentation
	Assessment Program	Internal and Independent External	Frequency & Effectiveness
Required	Experience	Per Statement of Work & Contract Documents	Subject Matter Expertise
	Standards	Per Contract Documents & Specifications	Certifications
	Capabilities	Relevant Resumes and History	Preferred 5 years
Expected	Associations	ASQ, USACE, CII, PMI, CMAA, AGC, and LCI	Preferred & Recognized
	Methodologies	DOE Guidelines, EFCOG, PMBoK, CQM-C	Best Practices
	Innovation	Tools & Technologies, Transfer of Knowledge	Blogs & White Papers
	Lessons Learned	Continuous Improvement Program	Description & Commitment

References

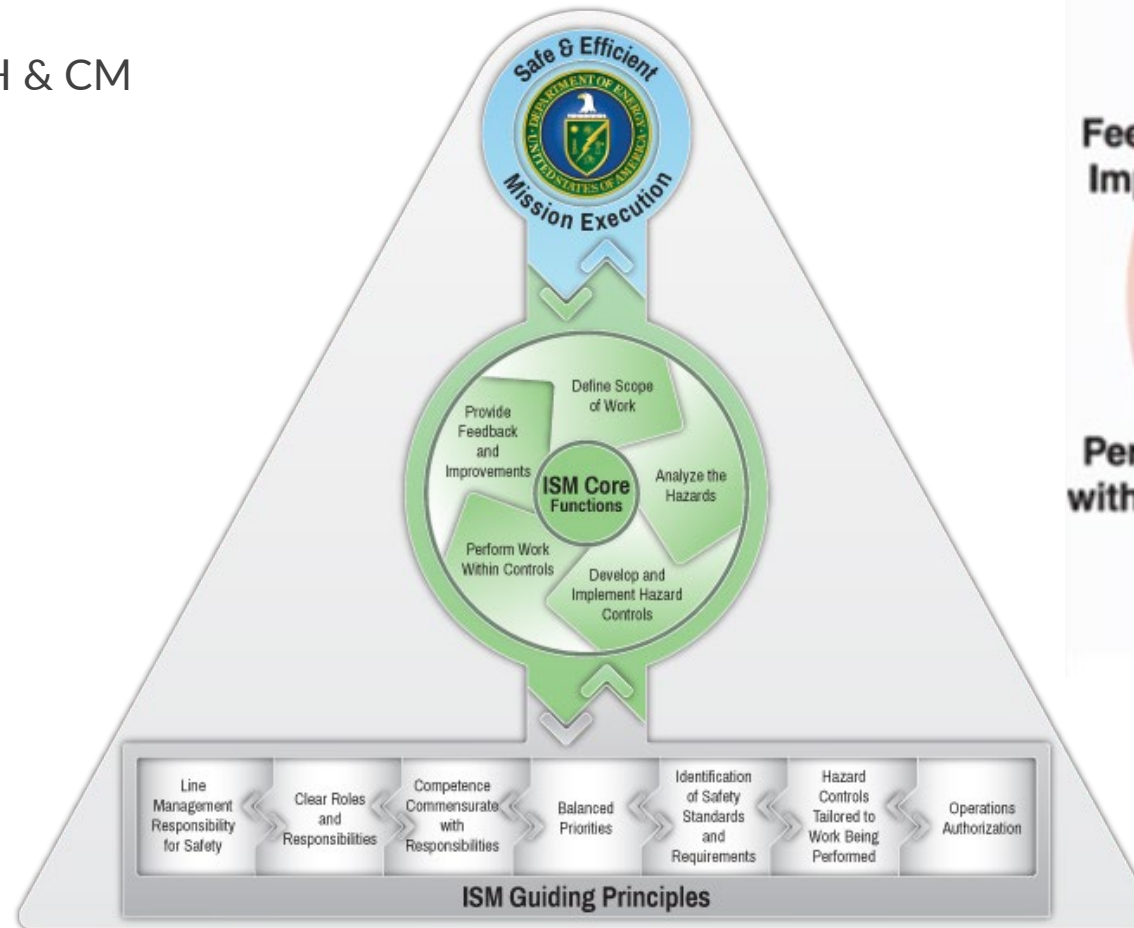
References		
AGC	AGC of America	https://www.agc.org/
ASQ	American Society for Quality	https://asq.org/
CII	Construction Industry Institute	https://www.construction-institute.org/
CMAA	Construction Management Association of America	https://www.cmaanet.org/
CQM-C	Construction Quality Management For Contractors	https://www.swg.usace.army.mil/Portals/26/2020%20CQM%20Student%20Study%20Guide.pdf
DOE Guidelines	DOE Technical Standards Program	https://www.standards.doe.gov/
DOE Order 414.1D	Quality Assurance Program	https://www.directives.doe.gov/directives-documents/400-series/0414.1-BOrder-d-chg2-ltdchg/
EFCOG	Energy Facility Contractors Group	https://efcog.org/
LCI	Lean Construction Institute	https://leanconstruction.org/
PMBok	Project Management Body of Knowledge: Process Groups	https://www.pmi.org/pmbok-guide-standards/practice-guides/process-groups-a-practice-guide
PMI	Project Management Institute	https://www.pmi.org/
USACE	US Army Corps of Engineers	https://www.usace.army.mil/

Quality Supervision

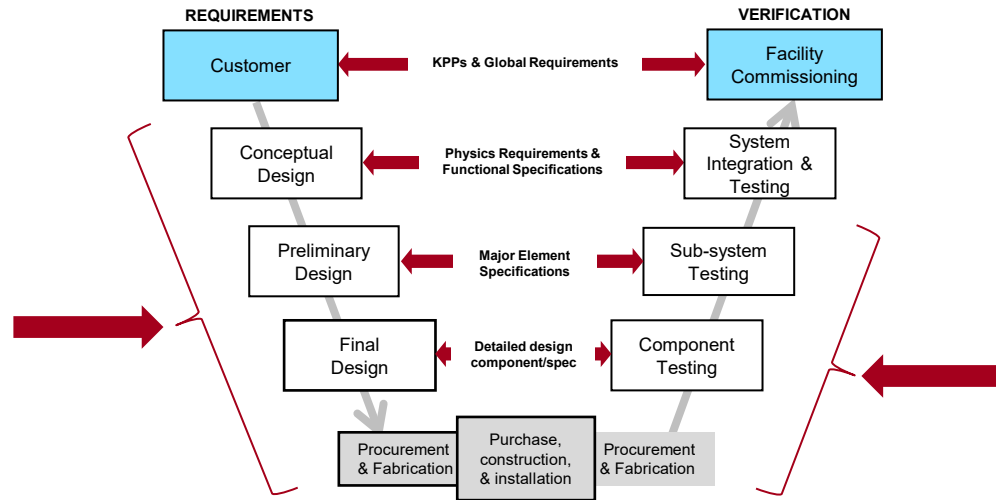
Integrated Safety Management

Work Planning & Control

In collaboration with ESH & CM



WPC Verification and Validation



Engineering

- Requirements Tracking
- Quality Level Identification
- Design Reviews & Approvals
- Peer & External Reviews
- Systems Engineering
- Technical Change Control
- Assessments & Documentation

Procurement

- Subcontractor Quality Control
- Site Visits & Witness Factory Acceptance
- Manufacturing Readiness Review (MRR)
- Shipping/Transportation Readiness Review (SRR/TRR)
- Factory Acceptance Test & Inspection
- Incoming Receiving Inspection at SLAC
- Final Acceptance by SLAC QA Representative

Construction

- BIO Vendor Design Review
- Monitoring of Vendor Execution
- Non-conformance Management
- Technical Change Control
- Controlled Document Repository
- Shipping & Storage
- Assessments & Audits

QA/QC throughout the Project Lifecycle

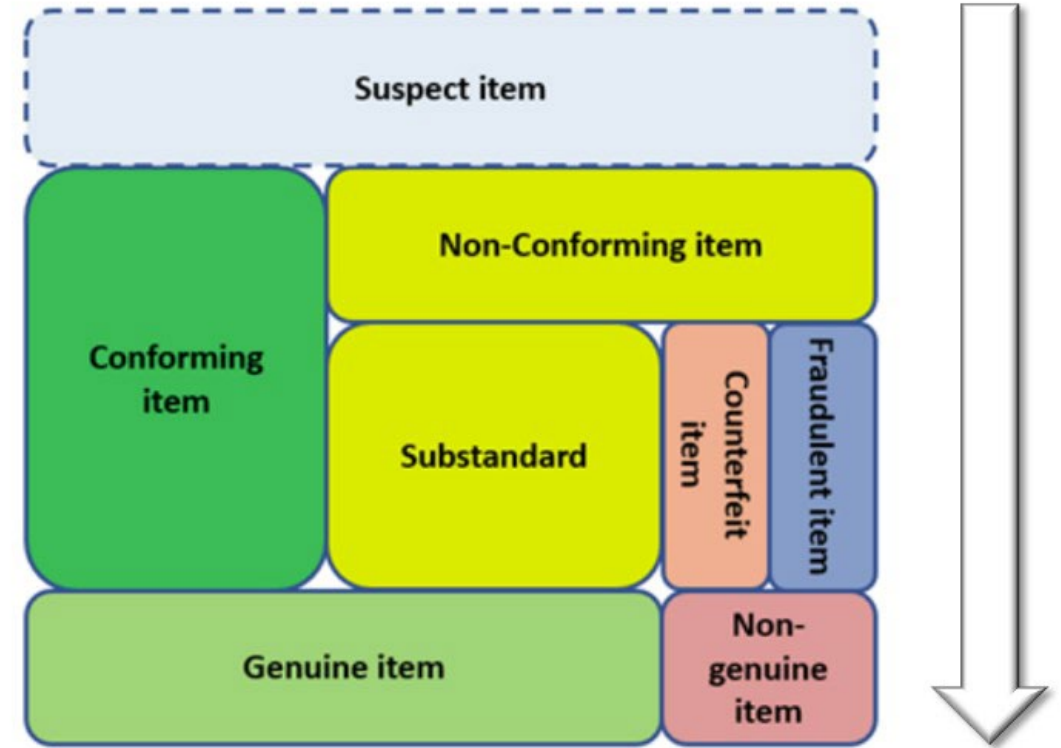
Suspect/Counterfeit and Defective Items

The Subcontractor has a **formal system** to adequately identify, define, and implement controls that:

- A. Identify and preclude S/CI from being introduced into the DOE supply chain that may create potential hazards;
- B. Ensure oversight of the S/CI program;
- C. Verify identified S/CIs are controlled and segregated and not placed back into the supply chain; and
- D. Effectively communicate S/CI and defective items/products to other organizations

Three main performance objectives for the S/CI assessment process:

- Oversight of Sub-tiers and Suppliers,
- Controls to avoid S/CI & Defective items,
- Reporting to SLAC QA per DOE Order 414.1D

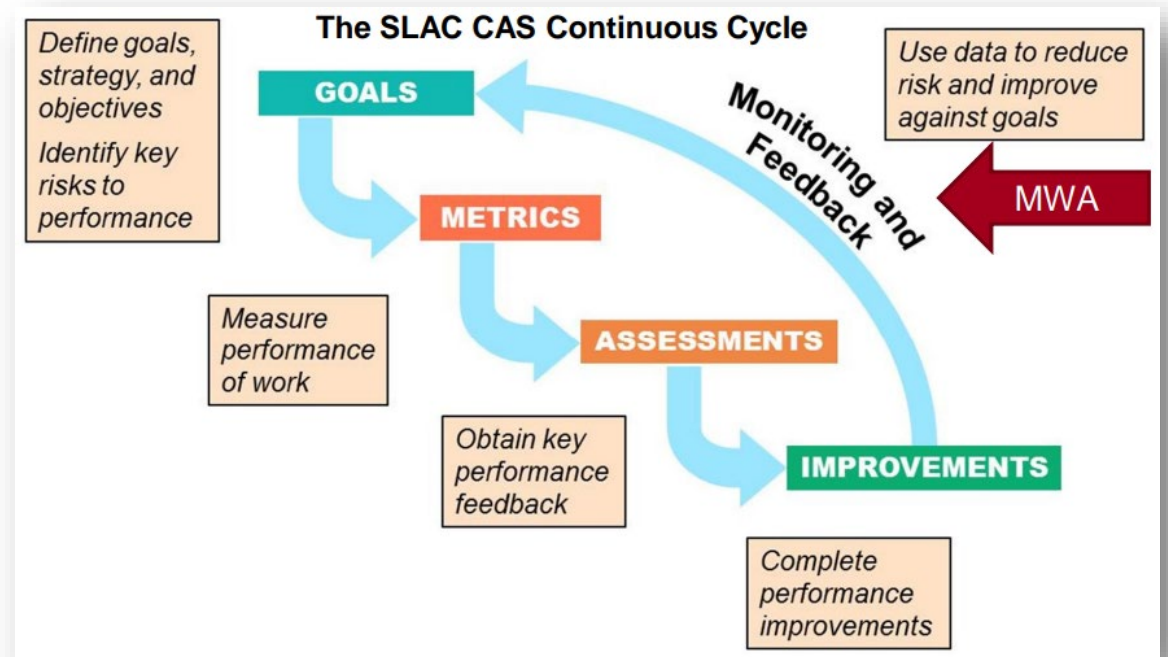


Management Walk Arounds

MWA offers management and supervision regular interaction with personnel during work.

- The program aims to engage team members, gather feedback, and ensure understanding of work activities and processes.
- Objectives include implementing necessary controls and fostering continuous improvement in processes.
- Observe work practices and monitor work areas, contributing to performance assurance.
- Complementing the SLAC Assessment Program.

More information and Resources are available at the <https://assurance.slac.stanford.edu/>



An aerial photograph of a long, multi-story industrial building with a corrugated metal roof, stretching into the distance. The scene is captured at dusk or dawn, with a soft, dim light in the sky. The building is surrounded by trees and a paved area. A large white diamond shape is overlaid on the center of the image, containing the text 'Thank You' in a bold, italicized font.

*Thank
You*



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