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Title: Updated LANL Institutional Risk Heat Map and Risk Register

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LANL Institutional Risk Heat Map

	Champions	Risk Title	Risk Statement IF [Risk Realized]/THEN [Consequences]	Likelihood	Severity	Risk Level
1	David Dooley	30 Pits per Year (PPY)	IF LANL does not obtain the necessary sustained funding to install the required production equipment, implement production processes, increase staff, and construct necessary infrastructure, THEN LANL risks not delivering on 30 Pit per Year.	High	Very High	High
2	LOC Chair (Derrick Montoya)	Learning Organization	IF LANL does not effectively communicate, implement, embrace and sustain a culture of organizational learning and continuous improvement, THEN recurrence of issues / incidents will be repeated and mission interruption will result in the loss of trust from our external customers and the public.	High	High	High
3	Stephen Warren	Rapidly Evolving Cyber Security Threat	IF our robust cyber security defenses are breached (through attack, questionable pedigree, unmitigated vulnerable software, Internet of Things proliferation, etc.) and unchecked, THEN LANL's reputation could be significantly damaged, there will be a potential for damage to infrastructure and loss of data, and deliverables and milestones could be impacted.	High	High	High
4	Michael Hazen	Environmental Management	IF LANL has significant non-compliances with environmental regulatory requirements or fails to receive authorization during permit renewals, THEN facilities, programs &/or missions may be adversely impacted and LANL's reputation with stakeholders could be eroded.	High	Medium	Moderate
5	Bret Simpkins	Facility Engingeering Standards	IF facility engineering requirements (Engineering Standards Manual) are not applied correctly using a graded approach, THEN low risk ML4 projects will be held to a standard far exceeding what is required, impacting project teams' ability to successfully execute on time and within budget.	Very High	Medium	High
6	LOC Chair (Derrick Montoya)	Formality of Operations	IF norms of performance, and the promotion of work practices fostering efficiency, safe operations and uniform quality are not appropriately realized in science, operations, engineering, production, maintenance and training and qualifications, THEN the laboratory will not achieve desired work practices with predictable operational outcomes <i>that</i> effectively manage safety, security and compliance risk.	Very High	Medium	High
7	LeAnne Stribley	IT	IF there is a loss of internet connectivity or data without adequate redundancy, THEN there will be significant impacts to LANL's ability to meet mission deliverables.	Medium	High	Moderate
8	Bret Simpkins	Infrastructure Current	IF facilities, utilities and infrastructure are not available, invested in, effectively maintained and managed and updated in line with current industry standards, THEN Laboratory capabilities will erode and LANL will not be able to execute its mission.	Very High	High	High
9	Bret Simpkins	Infrastructure New	IF mechanisms to build new infrastructure are not developed and approved by the DOE, THEN the laboratory will not be able to keep up with the demand for office and laboratory space given our growing mission and aging infrastructure.	High	High	High
10	Carol Burns	Quality of Science	IF LANL is not at the forefront of S&T with world class experimental and simulation capabilities that enable our ability to respond to future mission areas and technological surprise, as well as retain and recruit top scientific talent, THEN LANL's ability to serve the national mission will be severely impacted and the question of "why LANL" will become difficult to answer.	High	High	High
11	Michael Hazen	ISM	IF LANL fails to drive the continuous integration of safety in all management and work practices (at all levels, addressing all types of work and hazards), THEN LANL is accepting a higher risk of employees incurring significant on-the-job injuries, significant events, and / or operational impacts due to mission interruptions.	Very High	High	High
12	Michael Hazen	ISSM	IF LANL fails to drive the continuous integration of safeguards and security into management and work practices (at all levels, addressing all types of work and hazards), THEN LANL is accepting a high risk of incurring loss of critical information which could result in mission interruptions.	Very High	High	High
13	James Owen	Inventory Systems	IF LANL fails to properly control, account for, and develop additional efficiencies managing classified, hazardous, or special materials, THEN impacts to mission deliverables and reputation will occur.	High	Medium	Moderate
14	James Owen	Mission Capture	IF LANL does not capture significant weapons program scope post B61-12 LEP and W88 Alt 370, THEN the laboratory will face loss of current capabilities and staff required to execute our weapons development mission and LANL will reduce its ability to support the nation in accordance with the current Nuclear Posture Review strategy.	High	Medium	Moderate
15	Michael Hazen	NMC&A Inventory	IF LANL fails to effectively implement process monitoring for control and accounting for special and nuclear material, THEN production time could be impacted, LANL mission could be interrupted, and public confidence in operational capability could be eroded.	High	Medium	Moderate
16	Bret Simpkins	Nuclear Safety Management	IF LANL does not effectively manage nuclear safety processes (e.g. safety basis, criticality safety, PISAs, USQs) in accordance with documented requirements, THEN compliance issues within these programs can lead to shutdown of operations and impact mission deliverables.	High	High	High
17	LeAnne Stribley	Procurement	IF procurements are not sufficiently supported and effective, or if vendor availability issues cannot be resolved, THEN there will be impacts to LANL's ability to meet mission deliverables.	Very High	Medium	High
18	Kathye Segala	Project Management	IF management of project execution (including small projects) does not happen within budget, on schedule, and with expected safety/security/quality performance, THEN mission activities will experience delays, key deliverables will not be met, and negative reputational impact will occur.	Very High	High	High
19	Michael Hazen	Quality	IF LANL does not apply the appropriate level of quality rigor into all facets of work across the Institution (including in the areas of weapons design / production, research & development, and operations), THEN facilities, programs & / or missions may be adversely impacted and LANL's reputation with stakeholders could be eroded.	High	High	High
20	Kathye Segala	Construction Subcontract Management	IF LANL cannot effectively employ and manage construction subcontract work, THEN our ability to meet programmatic and facility needs, safety, cost, schedule, and quality requirements will be compromised.	Very High	High	High
21	LeAnne Stribley	Talent Management	IF LANL does not have a systematic process for workforce planning, recruitment, retention, and competitive compensation, THEN workforce quality and quantity will be significantly impacted, and there will be significant impacts to LANL's ability to meet mission deliverables.	High	High	High
22	Michael Hazen	Waste Management	IF LANL has significant non-compliances with waste requirements or fails to receive authorization to ship, THEN facilities, programs, &/or missions may be adversely impacted and LANL's reputation with stakeholders could be eroded.	Very High	Medium	High
23	Frank Gibbs	Continuity of TRU Waste Disposal Program	IF LANL is unable to continually ship TRU waste to WIPP, THEN production time could be impacted and LANL mission could be interrupted.	High	High	High
24	LeAnne Stribley	Effective Management of Off-site Subcontracts	IF LANL cannot effectively employ and manage off-site subcontract work, THEN our ability to meet programmatic and facility needs, safety, cost, schedule, and quality requirements will be compromised and public confidence in operational capability could be eroded.	High	Very High	High
25	Frank Gibbs	First Production Unit (FPU)	If LANL cannot produce a qualifiable product in support of first production unit (FPU), then LANL risks not delivering on the 30 PPY. Specific risks: a). Technical challenges to production b). DA requirements Change c:) sustainable funding for FPU	High	Very High	High
26	John Sarrao	Foreign Engagement	IF LANL does not effectively balance the benefit vs. risk of international engagements, THEN the reputation of the Laboratory could be adversely affected.	Low	High	Moderate

Risk Definitions for LANL Institutional Heat Map

Likelihood – Probability that the risk will be realized	
Low	Risk unlikely to occur. All aspects of risk are well understood and actions are, and will continue to be, effective at sustainably managing the risk
Medium	Risk is well characterized with low probability of realization. Actions indicate effective and sustained positive impact
High	Risk is generally understood and actions are having positive impact, but reasonable possibility of realization remains. Sustainable effective mitigation requires additional review and/or action
Very High	Risk is almost certain or has occurred. Risk needs further evaluation. Actions are not effectively, sustainably, or broadly mitigating risk

Severity – Effect of realized risk on the organization	
Low	Localized implications that do not suggest systemic concern. Will not impede the ability to achieve objectives or performance goals. Mitigated by normal practices
Medium	Potential systemic concerns that require modification from normal operations. Could impede ability to achieve objectives or performance goals
High	Could threaten the institution, major program, or project or could cause immediate harm and/or mission interruption. Could preclude ability to achieve objectives or performance goals
Very High	Extreme situation that impacts the site, DOE, and/or the public. Would require urgent notifications and possible off-site response. Will likely preclude the organization's ability to achieve one or more of its objectives or performance goals

Risk Levels

Low: Periodically monitored to ensure actions already taken or planned are having desired results

Moderate: Requires more frequent management monitoring and possible engagement and evidence of mitigation through assessment, metrics, MOVs, etc.

High: Requires significant and frequent management engagement and an action plan that results in prompt and sustainable reduction in risk level