Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
1	**Criteria:** Line management ensures that the contractors and subcontractors utilize systematic mechanisms to define the scope and schedule of work and identify associated risks and hazards so that the plan at each successively lower tier reflects an increasingly detailed description of the work to be performed.							
2	**Criteria:** Work control systems and procedures that address definition of work scope are developed for all types of work activities and are effectively implemented. These processes ensure that the scope of all work is clearly defined, communicated, and bounded such that activities necessary to control hazards to workers, the public, and the environment are identified.							
3	**Lines of Inquiry:**							
4	Are contractor/subcontractor managers and subject matter experts' managers actively involved in the definition of projects to ensure allocation of resources can be addressed?	4.a	At high level, the Annual Work Plan defines projects and allocates resources. Contractor and SME managers provide input for Engineering Division AWPs. There are no subcontractor manager to involve in process only subcontractor workers In addition, projects are also defined/clarified on a real time basis, when necessary, during floor level meetings which provides another opportunity to allocate resources		Development of the a Labor Allocation Worksheet to assist with identifying and allocating resources is in progress.	Will Oren	4/30/2008	

Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
		5.a	When working in the Accelerator facility - the work control process using ATLis ensures that the work is reviewed against AOD/ASE/FSAD limits. The planning process requires USI review. ES&H manual chapters define additional safety envelope criteria to be considered when developing SOPs and TOSPs. Next level down procedures contain the elements to meet the intent of integrated safety management, however the development process is not specifically flowed down from the ES&H manual processes.		The Eng group was in the process of converting lower level procedures to SOPs however, due to funding reductions, this effort is stalled. Reinitiate effort when funding levels allow.			
5	Do project documents, safety envelopes, and permits adequately bound the scope of work defined in work orders, procedures, and/or instructions? Does the work definition process include a screening against the safety envelope and/or permits?	5.b	During the CRAD workshop, attendees were unsure whether or not a requirement to evaluate work activities against Permit requirements (i.e., HRSD, NPDES, VPDES, & EPA Air) are integrated in the work planning process program document.		Review the Lab-wide work planning process (ES&H Manual Chapter 6711??) to see if it requires consideration of permit requirements during activity planning and procedure development. If not, revise work planning process, as necessary.	Bob May	NA - Tracked in Acc CRAD Wksp Matrix 5.c	NA
		6.a	Engineering work is bounded by Skill of the Craft (Worker Planned Work) processes specified in ES&H Manual Chapter ????, Personnel training & qualifications, and use of reviewed (some approved) procedures.		Review procedures not approved, and determine how to get them approved.	Ron Lauze		
6	Is the work observed adequately bounded by approved work packages, procedures, and permits?	6.b			Threshold and expectations associated with Skill of the Craft work category is being defined IAW an action on the ACC CRAD Wksp 6.a	Bob May	NA - Tracked in Acc CRAD Wksp Matrix 6.a	NA

Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
7	Have higher-level work documents, such as project plans, been translated into discrete work packages and procedures with well-defined boundaries and interfaces?	7.a	Jlab work planning process is well defined in the ES&H manual and the provided work planning tools are implemented in one form or another when developing many of the Eng work packages/procedures for discrete tasks specified in higher level documents.		See CA 5.a above	NA	NA	NA
8	Is work defined at the task level such that workers, supervisors, planners, and appropriate environment, safety, and health (ES&H) personnel can readily identify the hazards and risks associated with both the work activities and the environment/location in which it is performed?	8.a	Work is defined at the task level by scoping and work planning systems (i.e. ATLis, Maximo, TATL) and discussions during work planning meetings.		Reinforce the consistent use of available work planning tools to plan work (once revised - see 8.b)	Eng Rep??	4/30/2008	
		8.b			Review site-wide work planning process, revise as necessary to make it clear and usable by all Lab organizations, and communicate changes to Lab Orgs.	Work Planning and Control Team	4/15/2008	
9	Are work activities properly prioritized to allow adequate allocation of resources and scheduling based on the importance of the work, safety impact, and risk?	9.a	Lab-wide: Routine prioritization and coordination meetings. Additionally, Lab priorities are defined by Lab Director. Attend planning meetings of organizations being supported (weekly and daily).	Y	NA	NA	NA	NA
10	Have adequate personnel and equipment resources been identified for the performance of work, including operations, maintenance, and ES&H support?	10.a	Personnel and equipment resources are identified in the Annual Work Plan Labor Allocation Worksheet (in development) also identifies labor resources		See CA 4.a	NA	NA	NA
		11.a	Daily toolbox meetings, pre-review by workers of the procedure before it is finalized, job walkdowns during work planning process.	Y	NA	NA	NA	NA

Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
11	Do work-planning processes provide for early involvement of workers and ES&H staff to fully define the work and allow effective identification of hazards? Are specific thresholds identified for involvement of ES&H personnel in the hazard analysis process?	11.b	ES&H Manual chapter 3210, Risk Matrix Thresholds, requires that for risk levels above 2 that ES&H personnel be involved in the planning process.		Determine and clarify in procedure whether specified actions based on risk code are applied before or after mitigation of the hazard. If before mitigation, revise the procedure and communicate the clarified expectation to all work groups.	Bob May	4/30/2008	
12	Are tasks for minimizing waste generation and controlling the release of effluents to the environment adequately defined during work planning?	12.a	Potentially contained in ES&H manual, chapter 6711, Environmental Monitoring		Determine if Chapter 6711 of the ES&H Manual specifies waste generation and effluent release be considered during work planning. If not determine appropriate whether or not Ch 6711 is the appropriate place for this information and add accordingly.	Bob May	NA - Tracked in Acc CRAD Wksp Matrix 12.a	NA
13	Are work packages sufficiently detailed, based on work activity and degree of hazard, to establish a clear understanding of the work to be performed and how safety should be integrated into that work?	13.a	Clear understanding of work to be performed and how safety is to be integrated is covered in Work packages, training contents, qualification expectations, daily toolbox meetings, and job walkdowns.	Y	NA	NA	NA	NA
14	Is worker input integrated into planning activities?	14.a	See 11.a above	Y	NA	NA	NA	NA

Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
15	**Criteria:** Work systems and procedures are developed and effectively implemented that ensure hazards for all work are identified and appropriately analyzed based on the significance of the hazards. Prior to the initiation of work, line management identifies, analyzes, and categorizes the hazards associated with the work activity so that the hazards are eliminated or appropriate administrative and engineering controls can be put in place to prevent or mitigate those hazards.							
16	**Lines of Inquiry:**							
17	Do institutional level ES&H procedures effectively address the hazard analysis process at the working level and are the procedures properly implemented?	17.a	When TOSPs, SOPs & OSPs are written the hazard analysis is formally and effectively addressed. Workers sign these documents indicating that they read them and understand. SMEs, EHS professionals, line management and DSO review & approve these documents. Field procedures which are equipment or process specific are reviewed by SMEs and usually contain safety components but not always. They are not treated as SOPs at this time. Hazard analysis process labwide is standardized but training what has been offered is sporatic and does not produce the confidence that this method is consistently used by a wide range of staff.		Determine how field procedures should be classified in "documentation sense" i.e. SOPs, bench instructions,…. Convert existing documents to adhere to as yet unpublished standards. EHS group has plans to offer more consistent and updated training	Document Manageme nt Team. MJB	5/1/2008	

Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
18	Are the responsibilities for environment, safety and health subject matter experts and reviewers for hazard analyses established and understood?	18.a	Responsibilities are established in EHS manual for EHS SMEs and reviewers as well as specific specialists outside that Division. Reviewers and SMEs that are outside the EHS Division follow general responsibilities for all staff as defined in EHS manual specific chapters. Document authors define what they want the specific reviewers to focus on in their review. Past staff roles were well understood however recent staffing changes have clouded the current assignments until new staff is in place.					
19	Are standardized hazard assessment processes developed and appropriately graded in their approach based 011 the complexity of the activity/work, performance frequency, and initial or previous hazard screenings or analysis of the activity?	19.a	Use standard THA out of EHS manual. Several SOPs etc. are based on past SOPs and are modified for complexity of task, frequency. Previous screens or analysis are used as appropriate.					
20	Are thresholds identified within the hazard analysis process to trigger appropriate involvement of ES&H professionals?	20.a	Yes, ESH professionals are consulted when hazards are unusual, at RC >2, or activity is new. Some areas such as duel feeds require formal TOSPs to be written that EHS professionals must review					
21	Do the hazard analysis processes address all types of work activities to be performed including skill of the craft or skill of the performer?	21.a	Skill of the craft has yet to be defined at the lab so this is not addressed. Skill level of the worker is considered but not formally managed at this time. EES was in process of formalizing this, Cryo group also has formal internal training required but not documented.					
22	Do formal procedures guide the development of activity-level hazard analyses and ensure the hazard analyses are tailored to the specific work being performed?	22.a	EHS Chapter 3210 defines the formal procedures.					

Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
23	When work scope and technical work document tasks are changed, are the hazard assessments reviewed for impact'?	23.a	When task is submitted through ATLis this sometimes happens. Minor changes are handled in toolbox meetings, major changes can be handled by formal meetings but no set guidance for these breakoff points exist. However, work walk arounds, lessons learned and STOP observations, help to set expectations on when these breakoff points are reached. Chapter 3210 requires that hazards are reanalized when work scope changes.					
24	Do planners, workers, environment, safety and health and waste management staff, and facility management personnel walk down work sites to identify activity-related hazards and co-located hazards based on the risk associated with the activity?	24.a	Yes as appropraite for the work, all ATLis tasks are reviewed by EHS professionals for possible walkdown or further analysis if deemed appropriate	Y	NA	NA	NA	NA
25	Are resident area hazards and potential for additive or synergistic effects properly considered for the introduction of additional hazardous, materials, or activities?	25.a	Formal THA for SOPs etc. consider this as do ATLis controlled tasks. Work conducted within groups is reviewed in toolbox meetings and also considers these additive effects.	Y	NA	NA	NA	NA
26	When conditions change, are new potential hazards analyzed?	26.a	See 23					
27	Are accident scenarios related to hazardous work analyzed and properly considered to mitigate potential occurrence and severity?	27.a	Yes, particularly in formulation of SOP and in the application of Chap. 3210. Otherwise it is picked up in toolbox meetings or other coordination meetings that plan the work. Documented as appropriate depending on the complexity of the job. STOP observation process	Y	NA	NA	NA	NA
28	Are workers involved in the hazard analysis process?	28.a	Yes, preliminary analysis done by both work supervisors and workers then checked by either the floor workers or supervisors.	Y	NA	NA	NA	NA

Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
29	**Criteria:** Management systems for work control are developed and effectively implemented for work activities that ensure development of adequate hazard controls for performing the work safely and mitigating environmental impact.							
30	**Criteria:** Line management has established processes for identifying and tailoring controls for hazards associated with all facilities, operations, and work activities.							
31	**Criteria:** Hazard controls are established based on an analysis of hazards, vulnerabilities, and risks in the work environment (e.g., radiological, chemical. industrial, physical, and natural phenomena).							
32	**Lines of Inquiry:**							
33	Are standardized hazard controls developed and used in an appropriately graded approach based on project/work complexity and risk, performance frequency, and hazard analysis results?	33.a	EHS manual chapter 3210 forms the basis of all hazard analysis performed within Engineering. It is applied in a graded way depending the complexity and level of overall risk. Engineering uses other Divisions' work control tools depending on the ownership of the equipment being worked on. These were formulated with our input. Additionally a conduct of engineering process is being developed that will defined how the engineering process is conducted within the Division. Prior examples of such documents that may now be out of date are: EEOD, Machine Shop Business plan, Magnetic Measurement Business Plan, Document Control Handbook, EECAD Business Plan.... (Previous holds for this CRAD) ATLis used for standard Hazard ID, TOSPs, SOPs, OSPs use the graded approach and are standardized. Division between skill of the trade and those tasks complex enough to document a formal THA is unclear.					

Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
34	Do controls encompass each phase of work performance and all aspects of the work, including potentially abnormal or emergency situations?	34.a	Yes, specific task procedures do this, examples U-tube operations, VVU operation for safing out of power supplies. For emergencies we follow well known labwide procedures that we are trained in. i.e. ODH training, spill control, fire procedures,…..	Y	NA	NA	NA	NA
35	Are the knowledge, skills, and abilities of the work force considered when selecting the form of controls'?	35.a	Yes in the sense that we check to be certain that staff has equipment specific training for the task at hand as well as the relevant general safety training defined by their ITPs. However, where abilities are being developed we use active OJT where trainee is partnered with an expert.	Y	NA	NA	NA	NA
36	Are the types of controls (engineering, administrative, and personal protection equipment) applied in the correct sequence and with an appropriate technical basis?	36.a	As per the EHS manual the preference for controls is engineering, administrative and finally PPE, Engineering adheres to this philosophy. These are reflected in formal work documents When informal or toolbox briefings are conducted to establish these controls this hierarchy is certainly used as guidance and controls enforced by field supervision.					
37	Are the hazard controls comprehensive and adequate for maintaining planning efficiency while ensuring acceptable hazard mitigation or elimination?	37.a	Yes, the controls are developed to adhere to EHS manual requirements in a graded way. Examples: different class/mode matrix for electrical work, ODH rating gradation, radiation classification of areas/equipment.					
38	Are corresponding training requirements incorporated into controls and hazard assessments'?	38.a	yes, examples are TOSPs, SOPs, OSPs, and equipment specific procedures i.e. LTT procedures for box PS, LTT procedures for compressor lockout.					
39	Are thresholds identified for involvement of ES&H personnel in the tailoring or implementation of hazard controls?	39.a	The see every ATLis, they see every TOSP, SOP…, they asked to be informed when certain tasks are being performed and staff recognizes when unusual circumstances require guidance/review by EHS professionals. Above RC 2 requires EHS involvement since a work control document is required to do the work.					

Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
40	Are workers/supervisors stop work authorities and responsibilities clearly defined for unexpected hazards or safety concerns?	40.a	Yes, see lab policy statements					
41	Do procedures address liaisons and interfaces between organizations to ensure conflicts and overlapping work activities are properly coordinated and resolved?	41.a	yes in formally documented tasks especially through ATLis and large projects that have appointed project leads, Additionally regular coordination meetings such as the 8:00 AM meeting, 1:30 Monday meetings, detailed project planning meetings help to coordinated and resolve interface issues.					
42	Are control sets sufficiently analyzed to ensure they do not conflict or introduce additional hazards?	42.a	yes in our standard work planning process.		EHS manual needs to have 3210 T2 appendix checklist item added to ask the question: Have any of the applied controls introduced another hazard, example: PPE creates an over heating problem.			
43	Do controls sufficiently provide notification and afford protection to co-located workers who may either be present or traverse the areas potentially impacted by the activity?	43.a	Yes particularly where formal task documentation has taken place. Examples: SS 8:00 AM work map during SADs, S&A cones, vacuum ropes, NFPA 70E boundaries, fire watches, posted guards, 2 man ODH rule.					
44	Is independent safety review of the adequacy of controls provided for higher hazard activities?	44.a	Yes, EHS provides this service. These activities require OSPs, TOSPs….					
45	Are workers involved in the development of controls?	45.a	Yes, they often write the documents or provide verbal input.					
46	Are parameters clearly defined and established in appropriate facility procedures? Are hazard controls sufficient to ensure that facility and other operating limits are not exceeded?	46.a	yes through the FSAD (Final Safety Assessment Document) & the ASE(Accelerator Safety Envelope)					
47	Have facility safety requirements been clearly translated into facility, building, system, and equipment specific information that are available and usable by workers within the facility?	47.a	yes through the FSAD & the ASE as well as SSG procedures for personal safety systems, ODH postings, high noise areas, general access and specific RWPs.					
48	Are appropriate hazard controls from hazard analyses and permits included in approved work documents and are they adequately implemented'?	48.a	yes in formally documented tasks especially through ATLis and large projects that have appointed project leads, additionally SOPs & permits are posted at the place of work.					

Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
49	Are standardized hazard controls developed and used in an appropriately graded approach that considers work complexity, performance frequency, and magnitude of the risks'?	49.a	EHS manual chapter 3210 forms the basis of all hazard analysis performed within Engineering. It is applied in a graded way depending the complexity and level of overall risk. Engineering uses other Divisions' work control tools depending on the ownership of the equipment being worked on. These were formulated with our input. Additionally a conduct of engineering process is being developed that will defined how the engineering process is conducted within the Division. Prior examples of such documents that may now be out of date are: EEOD, Machine Shop Business plan, Magnetic Measurement Business Plan, Document Control Handbook, EECAD Business Plan.... (Previous holds for this CRAD) ATLis used for standard Hazard ID, TOSPs, SOPs, OSPs use the graded approach and are standardized. Division between skill of the trade and those tasks complex enough to document a formal THA is unclear. Also see #37 answer.					
50	Are work documents complete with adequate procedures, instructions, and/or drawings, and are bounding conditions and limitations clearly specified?	50.a	yes, lift plans, TOSPs, OSPs, pressure system work are good examples					
51	Are permits appropriately tailored, specified and integrated into the work package (e.g., Lockout/Tagout, radiological work, confined space, hot work, energized electrical, elevated work, and asbestos abatement)?	51.a	yes, hot work permits, RWPs, equipment specific procedures (see cryo & EES), confined space entry permits					
52	Is the reliability of hazard controls for higher risk activities assessed and failure consequences determined and considered?	52.a	yes, mitigated hazard risk codes reflect the reliability of the hazard controls employed					
53	When project/work scope and tasks are changed, are the hazard controls reviewed for impacts?	53.a	if change is large it is, if change is small skill of the trade THA in the field addresses the changed conditions.					

Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
54	Are training requirements for personnel needed to perform the work in accordance with established controls clearly defined, specified and implemented'?	54.a	yes, in formally documented procedures, ITPs provide overarching safety training and equipment specific training provides specific task training with toolbox meetings addressing daily tasks where training requirements and adequacy are reviewed before work is started.					
55	Are appropriate analytical parameters and data quality objectives included in sampling and analysis programs?	55.a	yes, good examples in S&A, MSA process….					
56	Are the required administrative and engineering controls in place at locations where waste is generated and stored (for example, signs identifying less-than-90-day storage areas) per internal and external requirements?	56.a	Yes, rad waste, contaminated oil, oily rags, recycled batteries, etc. would be a good examples					
57	Are signs and postings clear and current with regard to hazards and entry requirements?	57.a	yes		Need to review cluttered state of signage on access doors around the site.			
58	Is there appropriate linkage between tasks, hazards, and hazard controls in work control documents?	58.a	yes, in SOPS….					
59	Are workers and appropriate environment, safety, and health professionals included on planning teams and involved in hazard control development? Are minimum thresholds identified, based on the hazards and risks, which require the involvement of ES&H and waste management personnel and subject matter experts when developing work packages and during work activities?	59.a	EHS staff sees every ATLis, they see every TOSP, SOP…, they asked to be informed when certain tasks are being performed and staff recognizes when unusual circumstances require guidance/review by EHS professionals. They are included in project reviews where work hazards are a significant concern and they are asked to review specific tasks in the field. Workers are involved in all aspects of developing work plans and control documents. All are required to read and sign work control documents outlining hazard controls.					
60	Do environmental, waste management, radiological, health, safety, and operations personnel have an adequate understanding of each other's requirements and processes to minimize environmental impacts and meet regulatory requirements?	60.a	We aid in this coordination effort through awareness training (i.e. spill prevention), and tight coordination with the appropriate SMEs					

Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
61	Are the roles and responsibilities for ES&H subject matter experts, and reviewers well documented, and are development and implementation or controls established and understood?	61.a	EHS manual documents their roles & responsibilities. Rapidly changing staff has recently made it difficult to attach specific names to these roles.					

Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
62	**Criteria:** Line management ensures that work is safely performed and managed in accordance with requirements and safety management performance expectations. Contractors and subcontractors execute defined requirements such that employees are protected from adverse consequences.							
63	**Criteria:** Line management has established and implemented processes to confirm that a facility or work activity, as well as the work force and selected hazard controls, are in an adequate state of readiness before authorizing the performance of work.							
64	**Criteria:** Line management has the responsibility for ensuring that all operations are authorized at a level commensurate with the hazards, and has established work authorization processes for site, facility, and activity-level operations.							
65	**Lines of Inquiry:**							
66	Are work activities formally scheduled on the plan of the day, or equivalent mechanisms, to facilitate notification to affected personnel, resolution of scheduling conflicts, identification of resources and support required, prioritization with other work, and availability of required facilities and systems?	66.a	Yes. ATLis tasks are generated, approved, and scheduled. Scheduling and the plan for the day is discussed at the 0800 meeting, led by the Program Deputy. The Crew Chief is also informed of the plan and switches the accelerator mode accordingly. Regularly scheduled group meetings and toolbox meetings also address all of these requirements. As appropriate individual group schedules are kept to help coordinate work in multiple areas for multiple customers.					
67	Are pre-job briefings appropriately performed and effective in communicating work scope, prerequisites (including training), hazard control requirements, and permit requirements to all workers? Are job specific and area hazards adequately communicated to all workers before the start of work?	67.a	Yes, Workers are relied upon to keep their training current and checked by supervisors either by checking ITPs and through regular training system notifications. The hazards associated with a given task are communicated and discussed in work control document reviews, walk downs of jobs, toolbox meetings.					

Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
68	Is there an effective process that defines the interface requirements between the facility managers, operations, support organizations, and the maintenance organization to ensure that defined work does not overlap and cause conflicts?	68.a	ATLIs and its clones allow anyone to review the task and comment. The Operability group also reviews the ATLis and redirects it to any group they feel is not already aware. Each ATLis is routed to ES&H for review. 8:00 AM meetings, toolbox meetings etc. also serve this purpose.					
69	Does the work approval and authorization process define appropriate mechanisms to address significant changes in work scope or method of work completion once initial approval is obtained?	69.a	The worker and/or supervisory staff reevaluate the work if the scope has changed. This can lead to a quick and simple conversation to a lenghtly stopage of work for detailed conversations between many individuals or groups. For significant changes recognized by field staff it is required to elevate to the supervisor to address the changes.					
70	Have work activities and projects been properly planned, reviewed, and authorized? Are methods for authorizing work and verifying the readiness to perform work formal and documented?	70.a	ATLIs and its clones allow anyone to review the task and comment. The Operability group also reviews the ATLis and redirects it to any group they feel is not already aware. Each ATLis is routed to ES&H for review. 8:00 AM meetings, toolbox meetings etc. also serve this purpose.					
71	Is proper authorization obtained to perform the work (e.g., project work or work package approval) and immediately prior to start of work (work release – facility/building conditions adequate to start work)?	71.a	Overarching AWP system provides approved work scopes and project deliverables. Scheduled work is authorized through ATLis and its clones. Immediate work is authorized through the Crew Chief. We presently do not require an ATLis for Immediate maintenance but are in the process of changing this.					
72	Is the work performed in a manner consistent with the defined work scope and limitations?	72.a	Yes, we follow SOPs, TOSPs…. As well as daily workplans to execute our work. If changes to the plan are encountered the staff uses its training to evaluate the change, accommodate for it and communicate issues up the supervisory chain.					

Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
73	Are all precautions and prerequisites met including facility/system configurations, hazard controls, and other conditions?	73.a	Yes. LT&T is performed for hands on repair. All electrical repairs are performed in Mode 1 whenever possible. Mode 2 repairs required additional paperwork (TOSP or OSP) before work can proceed. PSS system controls hazards defined in the FSAD and ASE.					
74	Are training requirements and pre-job briefings completed and adequate for the authorized work activity?	74.a	Yes. All workers are assigned ITP's and keep them current. Briefings are conducted at a level commensurate with the work.					
75	Are personnel qualified and trained to perform the work in accordance with established controls?	75.a	Yes. Supervisors define the training requirementsand input that information into the workers ITP. Equipment specific training required for involved employees is evaluated during work planning. Specific technical training including certifications are required to work on systems that have formal requirements as defined by the EHS manual. i.e welding certs, pressure system training, rigging qualifications.					
76	Is there periodic and adequate supervision of activities based on the risk of the work activity'?	76.a	STOP observations are performed, EHS oversight based on ATLis task analysis, supervisor walk arounds, MSA program.					
77	Is the supervisor's span of control adequate based on the complexity of the work, the hazards, and the number of concurrent jobs being supervised?	77.a	At group leader level and above there are cases where the span of the leaders responsibilities are more extensive than is possible to manage efficiently. Below the group leaders it appears that supervisors are tasked with the proper level of responsibilities.					
78	Do personnel adhere to postings, work control documents, procedures, and permits, including working within defined scopes, instructions and hazard controls, and completing required documentation?	78.a	Yes. Postings can include RadCon, ODH, permits, OSP's, TOPS's, etc. What is posted, when, and why is very well defined in the ES&H manual.					

Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
79	Are quality control/quality assurance provisions accurately and adequately followed during performance of the work?	79.a	QC is done with good examples existing in Alignment, machine shop & fab shop. Recent efforts in pressure systems, welding and general QA processes are starting to increase. Drawing QC checks are part of the way of doing business and quality checks on mechanical drawings follow procedures laid out in document control.					
80	Are workers knowledgeable of activity/project level instructions and are they competent so the work is performed as described in the work documents?	80.a	yes, the ATLis plan is written or read and reviewed by the person who will perform the work. Workers either write or read formal work control documents such as OSPs, TOSPs…. Before doing work.					
81	Is equipment placed in a safe condition at the end of the work activity or work shift, and properly turned over to the next shift?	81.a	JSA has a LT&T policy that is strictly adhered to. Employees that apply LT&T are trained in this policy and also take equipment specific training.					
82	Do workers/supervisors stop activities and/or correct deficiencies when tasks cannot be performed as prescribed by work control documents or when safety concerns are encountered? Do workers understand their stop work authority and responsibility?	82.a	Yes. We have a very clear STOP work policy, which has been used in the past.					
83	Are mission/production pressures appropriately balanced with the requirements to work safely during the observation of work? Do these pressures have the potential to lead to unsafe practices or failure to follow required controls?	83.a	Yes, management consistently communicates this balancing of priorities. The pressures that could have the potential to lead to unsafe practices are always there but the culture to put safety before schedule is understood by the staff. Application of that principle at the worker level is intrepreted by that worker and influenced by the supervisor.					
84	Are ongoing surveys or other analyses conducted to ensure work hazards are not changing and work controls remain effective?	84.a	STOP observations are performed and on the spot feedback given. Procedures and or work habits are changed accordingly. MSAs are conducted and work observations by EHS staff as well as supervisory staff provides feedback.					

Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
85	Do all personnel comply with established controls including procedure requirements, postings, barriers, limits, sampling and monitoring requirements, stop work limits, and personal protective equipment requirements?	85.a	Yes					
86	Are waste generation and storage requirements at the point of generation being performed (for example, hazardous waste containers are labeled and kept closed) within requirements?	86.a	RadCon has staged waste containers at the tunnel exits, oily rags and waste oil is controlled at the source see Machine Shop and Cryo					
87	Are hazard controls effective in their ability to maintain releases to the environment as low as reasonably achievable?	87.a	yes, but there have been isolated situations where staff inattention to controls has violated well known and trained lab procedures. Appropriate corrective actions were taken.					
88	Do workers properly segregate the wastes generated to facilitate the waste management requirements and enhance the pollution prevention opportunities?	88.a	yes, recycle containers and procedures trained in our EMS system.					
89	Are the environmental impacts of operations and activities properly managed in accordance with requirements?	89.a	yes we have radiation boundary monitors as well as a spill prevention plan and training as examples.					
90	Is there an established systematic approach to authorizing work, including projects, startup of processes and facilities, and operations?	90.a	Yes through ATLis, Test Plans, toolbox meetings, group meetings.					
91	Are ES&H representatives actively involved in the observation of work activities?	91.a	They receive every ATLis and ofthen indicate that they want to observe the work when it's performed.					

Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
92	**Criteria:** Line management has effectively developed and implemented a feedback and improvement process at the work activity level.							
93	**Lines of Inquiry:**							
94	Are formal post-activity review processes (e.g., post-job reviews, operations reviews) established and effectively used?	94.a	Lab-wide - No formal post job review process exists, a formal lessons learned session covering accelerator downtimes is conducted after each scheduled maintenance downtime.	N	Develop and implement a post job review process	Bob May	NA - Tracked in Acc CRAD Wksp Matrix 94.a	NA
95	Do subject matter experts, workers, supervisors, and line managers recognize, report, evaluate, and address accidents, incidents, near misses, injuries, illnesses, exposures and opportunities for improvement in a timely manner and in accordance with established procedures?	95.a	Lab-wide - ES&H Chapters 5200 (Incident/Injury Investigation) & 5300 (Occurrence Reporting) dictate this process.					
96	Is feedback from workers effectively solicited and used during work planning, execution, and closeout?	96.a	During routine group/toolbox meetings, the opportunity is provided for workers to give feedback (though not specific purpose of meeting). Feedback from workers is actively solicited. However, there is no formal process to document and track to resolution	N	Formal worker feedback mechanism is being developed by ESH&Q	NA	NA	NA
97	Is worker participation in safety programs (e.g., behavior based safety, safety committees) encouraged and effective?	97.a	Eng staff participate on the Worker Safety Committee, Electrical Safety Committee, Pressure Safety Committee, Material Handling Safety Committee, Safety Warden Training Development Team, Safety Warden Supervisor Training, Welding Program Development Eng has many Safety Wardens. Participate in presenting safety topics during Daily Safety Minute portion of meetings. Workers participate in work planning , hazard identification, and control activities.	Y	NA	NA	NA	NA

Line #	Criteria/ Lines of Inquiry	Item #	Engineering Div Compliance Description	Compliant (Y/N)	Corrective Actions	Action Manager	Target Comp Date	Actual Comp Date
98	Are lessons learned identified and incorporated into the work planning and authorization process?	98.a	Lessons learned are received from site Lessons Learned Coordinator and are distributed to engineering supervisors for application Lessons learned are typically not specifically reviewed as part of the work planning process	N	Site-wide lessons learned process is being developed by ESH&Q	NA	NA	NA
99	Do assessment activities by line oversight include observation of work activities by managers, supervisors, and subject matter experts?	99.a	Lab-wide - assessment activities are conducted managers, supervisors, and SMEs IAW the following: - work observation program (based on Dupont STOP) - management self assessment procedure - Independent assessment procedure - Safety Warden monthly safety inspections	Y	NA	NA	NA	NA
100	Are deficiencies and weaknesses identified during work activities appropriately documented and managed in accordance with site issues management processes? Are associated corrective actions developed and implemented as required?	100.a	Supervisors in engineering group are unaware of the existence of the issues management procedure. However, are aware of CATS due to prompting by Division Head and assignment of actions. Issues and deficiencies are evaluated, and if necessary, entered into CATS by Safety Warden (Safety Warden is only one who has CATS access).	N	Eng Supervisors review issues management procedure and flow down information to staff as applicable	All Eng Div supervisors	4/15/2008	
101	Have findings related to work planning and control from previous Independent Oversight assessments been effectively corrected?	101.a	Findings from independent oversights are entered into CATS and tracked to completion.	Y	NA	NA	NA	NA
102	For issues identified by the current inspection, what prevented contractor line oversight activities from identifying and correcting the problems?	102.a	Discussion indicated that the group thought that insufficient resources and funding as well as low priority may be cited by some as reasons that prevented Contractor oversight from identifying and correcting problems.					