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TO: Distribution May 23, 2002

FROM: PH-P1/M. Glenn

SUBJECT: 5/17/02 KSC Lifting Devices and Equipment Committee Meeting Minutes

A KSC Lifting Devices and Equipment (LDE) Committee meeting was held on May 17, 2002, at 12:30 pm, in the Operations Support Building, K6-1096, Room 6101G.

Meeting attendees were as follows:

<u>Name</u>	<u>Organization and Function</u>	<u>Mail Stop</u>
Malcolm Glenn	NASA S&MA	PH-P1
Carl Ray	USA	USK-852
Tom Hackett	USA SRB Fac Eng	USK-852
Larry Jones	NASA	PH-J
Walt Szczepanik	USA DE	USK-T29
Mike Mullins	USA GSE	USK-708
Richard Teixeira	USA MA	USK-291
Dick Bauman	Boeing-Fac Engineer-Cranes	7210-E350
Wally Majid	USA Heavy Equipment	USK-547
Janice Jingle	ROC-GSE	ROC-OSB
Jim Lewer	ROC-SAFETY	ROC-VAB
Michael Bolton	WYLE NDE	WYLE-321
Mark Wollam	USA ETM	USK-708

The purpose of the meeting was to discuss the NASA Standard for Lifting Devices and Equipment, NASA-STD-8719.9, approved May 9, 2002. NASA-STD-8719.9 cancels NSS/GO-1740.9.

Changes from NSS/GO-1740.9 to NASA-STD-8719.9 were discussed at the meeting, per the following:

- Renumbered standard from NSS/GO-1740.9 to NASA-STD-8719.9 and reformatted standard to NASA-STD format.
- Changed title from "NASA Safety Standard for Lifting Devices and Equipment" to "NASA Standard for Lifting Devices and Equipment".
- Added Revision Log.
- Added last two sentences of paragraph 1.3, regarding rented or leased LDE.

- Rewrote paragraph 1.7 concerning Safety Variances, to be in compliance with NPG 8715.3, "NASA Safety Manual".
- Added paragraph 1.8 to establish the requirements for Center Lifting Devices and Equipment (LDE) Manager and LDE Safety Committee.
- Added paragraph 1.9 to explain qualifications for personnel performing Nondestructive Testing (NDT).
- Added definitions for jack, mobile aerial platform and valley break.
- Added Paragraph 4.2.2.f to require crane directional markings.
- Clarified hoist brake testing requirements for overhead cranes (paragraph 4.3.3.d.2), mobile cranes (paragraph 5.3.3.f.2) and hoists and winches (paragraph 6.3.3.e.2).
- Added words to paragraphs 4.4.4 and 5.4.4 requiring daily inspection be documented.
- Clarified license renewal requirements in paragraphs 4.6, 5.6, 6.6, 8.6, 10.6, 11.6 and 12.6, to state renewal requires demonstration of proficiency or approval of supervision that proficiency is adequate and current.
- Added statements to paragraphs 4.6.1, 5.6.1, 6.6.1 and 10.6.1 to state certification program will be reviewed annually to assure contents, training material, testing and examination elements are up-to-date with current methods and techniques; and that any "lessons learned" are adequately addressed.
- Clarified wire rope inspection requirements in paragraphs 4.5.3, 5.5.3, 6.4.5 and 9.4.5, to add requirements from Wire Rope Users Manual.
- Rewrote paragraphs 4.8.1, 5.8.1 and 6.8.1 regarding handling explosives or Electro-Explosive Devices (EEDs).
- Changed Section 6 from 'Hoists' to 'Hoists and Winches' and added definition for winch in paragraph 3.1.
- Added inspection criteria for hooks in Paragraph 7.4.5.
- Changed Section 8 from 'Hydra-Sets' to 'Hydra-Sets and Load Measuring Devices' and added paragraph 8.4 for inspection of such equipment.
- Changed Section 10 from 'Slings' to 'Slings and Rigging', and added paragraph 10.6 on personnel certification requirements for riggers.
- Reduced the periodic load test factor for slings from 1.25 to 1.00 in Section 10.
- Rewrote paragraph 10.3.3.
- Added heat affected zone to inspection criteria for structural sling critical welds in Paragraph 10.4.5.f(9)(b).
- Added Section 11 for "Mobile Aerial Platforms".
- Added Section 12 for "Powered Industrial Trucks".
- Added Section 13 for "Jacks".
- Added Appendix C for "Lifting Personnel with a Crane".
- Added Appendix D for "Crane/Hoist Requirements to Load Test Other Lifting Equipment".

Discussion of the above items revealed several actions to be worked.

1. It was requested to provide the KSC definition of 'critical lift' as part of the meeting minutes.

The following is from the KSC Safety Practices Handbook, KHB 1710.2E:

Critical Lift: A lift where loss of control could result in loss of life, loss or damage to flight hardware, or a lift involving special, high dollar items, such as spacecraft, one-of-a-kind articles, or major facility components, etc. where loss would have serious programmatic impact.

The following is from NASA-STD-8719.9:

Critical Lift: A lift where failure/loss of control could result in loss of life, loss of or damage to flight hardware, or a lift involving special, high dollar items, such as spacecraft, one-of-a-kind articles, or major facility components, whose loss would have serious programmatic or institutional impact. Critical lifts also include the lifting of personnel with a crane, lifts where personnel are required to work under a suspended load, and operations with special personnel and equipment safety concerns beyond normal lifting hazards.

The two definitions are essentially the same, with NASA-STD-8719.9 providing more information, including examples.

2. Paragraph 1.3 includes two new sentences regarding rented or leased LDE. The only thing I know that needs to be worked at KSC regarding these sentences is lifting equipment used for construction on Center. It is not intended NASA-STD-8719.9 be a requirement for construction LDE, unless the lift is a critical lift.

Action:

I plan to document this implementation, with concurrence from the NASA Contracting Office and the NASA Institutional Safety Office. **Actionee:** Malcolm Glenn.

3. It is intended to write safety variances regarding the orbiter portable floor jacks and the Cougar lifts in the VAB, to not perform periodic load testing, because of some unique considerations.

Actions:

Send outline for safety variances to Mike Kelemen and Rob Summers for the orbiter portable floor jacks and to Bryan Salisbury for the Cougar lifts. Mike/Rob and Bryan will draft the safety variances. **Actionees:** Mike Kelemen, Rob Summers, Bryan Salisbury and Malcolm Glenn.

Also, determine if periodic load testing should be performed for floor type jacks in the SSPF, and document any variances, if required. **Actionee:** Dick Bauman and Malcolm Glenn

4. For critical cranes and hoists, it is required 'licenses indicate specific cranes (hoists) for which the operator is certified'.

Action:

Ensure KSC is working to the above. As I know now, I believe USA and Boeing will need to make some changes so operators can show certification for specific cranes. **Actionees:** Ed Morales, Dick Bauman and Malcolm Glenn, with assistance from training, etc.

5. Wire rope inspection/replacement criteria were written to be consistent with ASME and the Wire Rope Users Manual. For example, inspections for valley breaks are now included in NASA-STD-8719.9.

Action:

OPRs for lifting equipment should review and make any necessary changes to maintenance procedures, to be compliant with NASA-STD-8719.9.

Actionees: Lifting equipment OPRs.

6. Daily inspections for overhead and mobile cranes are required to be documented. I believe some SFOC user operated cranes will require changes to implement this requirement. **Actionee:** Ed Morales.

7. Paragraph 10.6.1 of the NASA Standard for Lifting Devices and Equipment, NASA-STD-8719.9, states "Only certified (licensed) and trained riggers are authorized to perform rigging tasks for lifting devices, equipment, and/or operations." At KSC, it is intended to require certification for folks who plan, select and hook up their own rigging; e.g., USA Heavy Equipment personnel selecting and using rigging from one of their rigging vans to perform a job, like lifting a portable generator on to a flatbed trailer. These personnel plan, select and connect the rigging for a given lift. On the other hand, personnel hooking up rigging using written instructions, like an OMI or GSE Hoisting Permit, do not require certification.

Action:

Ensure riggers are certified in accordance with NASA-STD-8719.9. I will work with the appropriate folks to implement 7 above. **Actionee:** Malcolm Glenn with assistance from others.

My intent is to work with folks, to ensure implementation, where actions are required. I do not intend to formally track actions. From the above and previous discussions/work writing the new NASA Lifting Standard, folks requiring actions to implement NASA-STD-8719.9 should know what those actions are.

NASA-STD-8719.9 was written knowing how we operate at KSC, however, there may be something missed above. Please contact me if you find or know of impacts/actions not listed above.

Contact me if you have any questions or need assistance with something.
Thanks.

Original signed by
Malcolm Glenn