

Critical Facilities Round Table

1st Meeting of the Legacy Data
Center Committee

April 7, 2006

Legacy Data Center Committee

- Chairperson: Horst Pfendt (interim)
- Vice Chairperson:
- Secretary:
- Program Chairperson:

Legacy Data Center Committee

- LDCC Purpose and Membership
 - Purpose
 - Address End-Users' existing environmental infrastructure deficiencies and provide a road map to correct those deficiencies to maximize up time.
 - Membership
 - Anyone interested in sharing his/her expertise in LDCC is welcome to become a member and participate in the activities.

Legacy Data Center Committee Environmental Survey Overview

- 1.0 Purpose
- 2.0 Summary of Survey
- 3.0 Background
- 4.0 Review Process
- 5.0 Present Condition Summary
- 6.0 Result Matrix
- 7.0 Appendix

Legacy Data Center Committee Environmental Survey Overview

- 1.0 Purpose
 - To Establish the Existing Condition of the Environmental Infrastructure
 - To Identify Design and Operational Deficiencies
 - To Identify and Assess Opportunities (Phase 1 of the Project Development & Execution Process)

Legacy Data Center Committee Environmental Survey Overview

- 2.0 Summary
 - In Section 5.0, the results for each present condition of the environmental infrastructure system will be summarized
 - In Section 6.0, the results will be entered into a results matrix

Legacy Data Center Committee Environmental Survey Overview

- 3.0 Background
 - Provide all background, including the original design criteria of the Legacy Data Center
 - Review the new operating parameters based on current trends

Legacy Data Center Committee Environmental Survey Overview

- 4.0 Review Process
 - Determine the present condition of the:
 - Electrical System
 - Process Cooling System
 - Special Area Detection/Suppression System
 - Architectural/Structural
 - Security and Data Center Access

Legacy Data Center Committee Environmental Survey Overview

- 4.0 Review Process (continued)
 - Site Subsystem Review Criteria
 - Information/Records
 - Operational Procedures
 - Regulations
 - Emergency Preparedness
 - Disaster Recovery Plans
 - Incidents

Legacy Data Center Committee Environmental Survey Overview

- 5.0 Present Condition Summary
 - 5.1 Electrical
 - 5.1.1 Utility Service
 - Information Records Fair
 - Operational Procedures Good
 - Regulations Poor
 - Emergency Preparedness NFR
 - Disaster Recovery Plans
 - Incidents

Legacy Data Center Committee Environmental Survey Overview

- 5.0 Present Condition (continued)
 - 5.1 Electrical (continued)
 - 5.1.2 Lightning Protection
 - Information/Records
 - Operational Procedures
 - ETC
 - ETC

Legacy Data Center Committee Environmental Survey Overview

- 6.0 Result Matrix; Source, Uptime Institute

| Subsystem Review | Information Records | Operational Procedures | Regulations | Emergency Preparedness | Disaster Recovery Plans | Incidents |
|-------------------------|---------------------|------------------------|-------------|------------------------|-------------------------|-----------|
| Utility Service | Good | Good | Good | Good | NFR | Fair |
| Lightning Protection | Fair | Fair | NFR | Fair | NFR | NFR |
| Power Distribution | Fair | Poor | Poor | Fair | Fair | Fair |
| UPS Systems | Fair | Good | Good | Fair | Fair | Fair |
| Batteries | Fair | Fair | Fair | Fair | Fair | Fair |
| Engine Generator Plants | Fair | Good | Good | Fair | Fair | Good |
| Computer Room Power | Fair | Good | Poor | Fair | Fair | Fair |
| Grounding | Fair | Good | Good | Good | NFR | Fair |

| Legend | | |
|----------------|------|---|
| Overall Rating | Code | Description |
| Good | Good | Satisfactory or minor modification needed |
| Fair | Fair | Moderate modification needed |
| Poor | Poor | Needs Immediate Attention |
| NFR | NFR | Needs Further Research |

Legacy Data Center Committee Environmental Survey Overview

- 7.0 Appendix
 - 7.1 Site Subsystems Checklist
 - 7.2 Site Subsystem Review Criteria
 - 7.3 Electrical
 - 7.4 Process Cooling
 - 7.5 Special Area Detection/Suppression
 - 7.6 Architectural/Structural
 - 7.7 Security and Data Center Access

Legacy Data Center Committee Environmental Survey Overview

- 7.1 Site Subsystems Checklist
 - Electrical
 - Utility Service
 - Utility's transmission, substation, and feeders
 - Utility or customer owned on site substation
 - Entrance equipment, circuit breakers, metering
 - Operations sequence, load shedding
 - Station batteries
 - Grounding
 - Maintenance documentation

Legacy Data Center Committee Environmental Survey Overview

- 7.1 Site Subsystem Checklist (continued)
 - ELECTRICAL
 - Power Distribution
 - Circuit breakers, switchgear, power distribution boards
 - Controls, automatic operation sequences, relays
 - Breaker operation
 - Feeders
 - Line disturbance analyzers
 - Short-circuit coordination
 - Spare parts
 - Maintenance documentation

Legacy Data Center Committee Environmental Survey Overview

- 7.1 Site Subsystem Checklist (continued)
 - Process Cooling
 - Special Area Detection/Suppression
 - Architectural/Structural
 - Security and Data Center Access

Legacy Data Center Committee Environmental Survey Overview

- 7.2 Site Subsystem Review Criteria
 - To provide a roadmap of the review process
 - To identify the strengths & weaknesses of the subsystems
 - Not to define corrections of problems but to identify and assess opportunities

Legacy Data Center Committee Environmental Survey Overview

- 7.2 Site Subsystems Review Criteria
 - 7.2.1 Information/Records
 - As built drawings for all systems
 - Drawing location
 - Original design criteria
 - Commissioning documentation
 - Life expectancy
 - Maintenance Records

Legacy Data Center Committee Environmental Survey Overview

- 7.2 Site Subsystem Review Criteria (con.)
 - 7.2.2 Operational Procedures
 - Sequence of operation
 - Equipment
 - Scripts as applicable
 - Equipment identification/nameplates
 - Training documentation
 - Etc...
 - Etc...

Legacy Data Center Committee Environmental Survey Overview

- 7.3 Electrical System Survey Report
- 7.3 Process Cooling System Survey Report
- 7.4 Architectural/Structural Survey Report
- 7.5 Special Area Detection/Suppression Survey Report
- 7.6 Security and Data Center Access Survey Report

Environmental Support Solutions (ESS)

- **Refrigerant Management Survey-Mock EPA Inspection**
 - benchmark current Title VI regulatory performance
 - identify problem areas associated with the federal regulations and provide solutions
 - review record keeping for regulatory compliance
 - review existing policy and management practices for refrigerants
 - provide a confidential report that defined solution pathway to compliance
 - keeps existing refrigerant compliance programs fine tuned while experiencing the common personnel and business changes that are common today

Environmental Support Solutions

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