GSA Capabilities Statement

804-458-0645 • info@reliability.com • www.Reliability.com

Root Cause Analysis Consulting, Training & Software

Consulting:

RCA Consulting and Facilitations Services

FMEA and Opportunity Anlaysis Consulting

Reliability Assessments

Customized Training

Training:

PROACT RCA Methods

Human Error Reduction

Failure Scene Investigation

Basic Failure Analysis

PROACT Lead Investigator

Software:

LEAP™ FMEA & OA

PROACT® RCA

PROACT® Trending

PROACT® Logic Tree Knowledge Management Templates

Reliability Center, Inc.

Key Contact

John Bartlow
Customer Service
804-458-0645 x317
jbartlow@reliability.com

The Company

Reliability Center, Inc. (RCI) is one of the most respected and established Reliability companies in the world. RCI has been providing the perfect combination of Reliability vision and execution to its clients with PROACT®, their signature branded service for Root Cause Analysis (RCA). RCI has grown into one of the major global providers of RCA and Human Error Reduction strategies. Its innovative analysis solutions have increased the precision, productivity and profitability of numerous business, government, healthcare and manufacturing organizations worldwide. As our clients expand their facilities and processes which requires more exact analytical procedures to ensure safety, mechanical and human reliability, RCI will continue to provide a wide range of services to meet their needs.

Capabilities

PROACT® Root Cause Analysis Software, Consulting and Training for Business, Government , Healthcare, and Manufacturing . Boost safety, profitability and productivity with minimal capital outlay using PROACT® Root Cause Analysis Methods and Software. Offerings include RCA, FMEA, OA, HER and more...plus our consulting services and training programs will guide your organization to its unlimited potential.

Why RCI?

RCI can help hospitals, manufacturers and government agencies produce the paradigm shifts necessary to challenge the limits of mediocrity and thrive in an increasingly competitive global marketplace. Join companies like Georgia Pacific, Coast Guard, NAVY, AES, BHP Billiton, Husky Energy, Amtrak, University of Michigan, PEMEX, SABIC & Memorial Sloan Kettering Cancer Center and become Reliability pacesetters.

Company Designations

CAGE Code: OMXW6
DUNS Number: 17-335-9555
TIN: 54-1304314
GSA: GS-00F-0007W

Corporate Structure

Small Business
Woman Owned Business

NAICS Codes

511210 Software Publishers
541330 Engineering Services
541614 Manufacturing Operations Improvement Consulting Services
541614 Productivity Improvement Consulting Services
541618 Other Management Consulting Services
541690 Safety Consulting Services
541990 All Other Professional Scientific and Technical Services
611420 Computer Training
611430 Professional and Management Development Training
611 519 Technical and Trade Schools
611710 Educational Support Services

SIN Codes

C7030 (132-33) Perpetual Software Licenses
C7030 (132-34) Software Maintenance
CR425 (871-4) Test and Evaluation
CR425 (871-5) Integrated Logistics Support
CR499 (874-1) MOBIS Consulting Services
CU099 (874-4) Training Services

Partial Client Listing

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PROACT® ENT System

Industry
AES Global - Power
Amtrak - Transportation
Atlantic LNG - Gas
BHP Petroleum Global - Oil
Cliff Natural Resources - Mining
Husky Energy - Oil
International Paper– Paper
Polinter - Chemical
PSEG - Power
SABIC IP - Plastics
Takreer - Oil
University of Michigan/Power Plant
Wyeth - Pharmaceutical

PROACT® ENT System

Healthcare—Acute Care Hospitals
Bon Secours
Liberty Health
Memorial Sloan Kettering Cancer Ctr.
PeaceHealth
Rockingham Memorial Hospital
Union Memorial Hospital

Pharmaceutical
Pfizer

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Training and Consulting

ADGAS/Abu Dhabi - Gas
Amtrak - Transportation
BP - Oil
Charter Steel - Steel
Dept. of Homeland Security
Dept. of Transportation
Dominion Virginia Power - Power
DuPont de Nemours - Chemicals
Genentech - BioTech
Jacobs Engineering/NASA Langley
Michelin - Durable Goods
PEMEX/MX - Oil
U.S. Coast Guard (USCG)
U.S. Navy (USN)
Westar Energy - Power

PROACT® for Meridium Users

Bapco - Oil
Bayer - Pharmaceutical
Braskem - Chemicals
Bruce Power - Power
Chevron - Oil
Foundation Coal - Mining
Georgia Pacific - Paper
Hovensa - Oil
Kimberly Clark - Paper
Luminant - Power
Manitoba Hydro - Power
Marathon - Oil
MeadWestvaco - Paper
NovaChem - Chemicals
P&H Mining - Mining
PPG - Chemicals
QatarChem - Chemicals
QatarGas - Gas
SABIC - Oil, Gas, Cement, Chemicals
Sasol Polymer - Chemicals
Suncor – Mining, Oil
Xcel Energy - Power

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Reliability Center, Inc.
Client Testimonials

"We are very pleased with the results, as a matter of fact; Reliability Center Inc. (RCI) was a significant contributor as we closed out our fiscal year around $17,000,000 below budget."

Dennis E. Love
General Manager, Mining, Syncrude Canada

"We have continued to increase our plant throughput year after year reaching a record 67 million barrels of synthetic crude oil. This represents a 24% improvement in throughput over a 4 year period"

Eric P. Newell
President and CEO, Syncrude Canada, Ltd.

"From the results that it [Reliability Center's Basic Failure Analysis (BFA) process] can achieve, I have a difficult time understanding why every company in the U.S. does not make use of BFA as a regular part of the way they conduct business."

Vernon Kingsbury
Maintenance Analyst, Lafarge Corporation

"Our most visible improvement is that our onstream time and production have increased substantially. Using a twelve month moving average our annual production rate is improved by 20% in the ammonia unit and by 32% in the urea unit."

Ernie Elsbury
Plant Manager, Arcadian Corporation

"I had a meeting with our VP last week and he was very impressed and blew him away with the [PROACT] methodology and the ability of the program to compile a full analysis and generate a report for him."

"Eastman Chemical has steadily reduced our level of complaints [customer] since we initiated the PROACT RCA process, whereby we currently have half the level of complaints corporately as we did 3 years ago."

Gary Hallen, Global Customer Focus Manager, Eastman Chemical Company

"Your work (Reliability Center) with our Reliability Team has enabled many of our Business Units to develop or improve their Reliability culture which has translated into improved business performance. Texaco has had significant and widespread financial benefits from its Reliability efforts. These efforts have specifically resulted in improved production quality and volumes, increased maintenance precision and improved business focus."

Lester A. Wilkes
Vice President, Texaco, USA

"In a world of "light speed" growth relating to hardware technology, we can easily lose focus of the Reliability path that was chosen. Your PROACT RCA methodology allows an individual the ability to pull their vision back from the technology clamor and see the path forward from 30,000 feet."

Terry A. Gierulski, President, Integrated Computer Concepts

"The activities undertaken by RCI were under the guidance and direction of their President, Mr. Charles J. Latino, who provided inspired leadership in successfully working with the facility to achieve significant progress."

Roland Kell, General Manager, Pembroke Cracking Company

Reliability Center, Inc.

Client Case Study Summaries

(Full text versions are available upon request.)

U.S. Navy, Utilization of Root Cause Failure Analysis in the Investigation of Marine Deck Fitting Failures

The Challenge: Cracking was discovered in the openings of cargo deck tie down fittings on ships under construction. There was a distinct possibility that these cracks could propagate through the fitting and into the strength deck plating, affecting the ships hull integrity. With more than 14,000 fittings installed on each ship, the appearance of approximately 400 cracks at the mid-ship area of the main and lower decks raised production and operational concerns.

The Solution: The PROACT® Root Cause Analysis approach was used by NAVSEA engineers to uncover the true physical, human and latent root causes associated with the cracking of the fittings. The top plate of the cloverleaf deck fitting installed in Navy Ro/Ro cargo ships were cracking before the ship was delivered. Several weak links were found in material and fabrication that when combined, became the root cause for the failures. Based on the information found through systemic testing the installed fittings were heat treated to remove the martensite, microcracks, and cold worked region initiation sites.

The Results: The vendor revised their manufacturing process to remove these areas on all future fittings. Testing of weld repaired fittings produced no failures below yield and an ABS approved weld repair procedure was formulated for any future cracks. Three (3) of the seven (7) ships (four were still under construction and not yet delivered) are sailing with no evidence of cracking (Naval Engineers Journal, pg 93 – 99, Winter, 2001)

Amtrak, Root Cause Analysis Increases Locomotive Reliability at AMTRAK

The Challenge: Persistently high failure rate of power modules on the high horsepower electric locomotive (HHP-8).

The Solution: A cross-functional team of Amtrak personnel, trained in the PROACT® Root Cause Analysis methodology, worked closely to determine the various root causes using this disciplined approach.

The Results: Changes were made to maintenance, condition monitoring and troubleshooting procedures for HHP-8. The physical, human and latent root causes for the high failure rate of HHP-8 power modules were determined and addressed during this six month investigation. The availability of the HHP-8 locomotive fleet improved by 80%.

(Proceedings of JRCICE2007, 2007 ASME/IEEE Joint Rail Conference and Internal Combustion Engine Spring Technical Conference, *Root Cause Analysis Increases Locomotive Reliability at AMTRAK*, March 13–16, 2007, Pueblo, CO, USA)

University of Michigan (U of M), Central Power Plant

The Challenge: Chronic failure of heat-recovery steam generator (HRSG) causing the gas turbine (GT) to trip.

The Solution: Trained analysis team using Reliability Center's PROACT® Root Cause Analysis (RCA) process and software.

The Results: The outage investigation committee successfully instituted the PROACT® RCA strategies to resolve the recurrences of issues involved with the HRSG/GT events. These strategies resulted in a thorough understanding of the system and components, discovery of the system failure that caused the outages, implementation of the committee recommendations and the development of an ideal training tool for plant personnel. To date there has not been another outage.

University of Michigan was recognized as a Root Cause Analysis Best Practice Organization in Combined Cycle Journal (1st Qtr, 2007) as a result of this investigation.

Amtrak, Root Cause Analysis of Passenger Door System

The Challenge: A particular fleet of coach cars operated by Amtrak were experiencing a side door problem. The coach car side doors system exhibited undesirable characteristics when in service. Multiple reports were received that during station stops all of the open side doors would unexpectedly close even though the train speed was at zero. During this unexpected side door closing sequence all of the obstacle detection systems were disabled presenting a potential hazard to the traveling public.

The Solution: The PROACT® Root Cause Analysis approach was used by Amtrak engineers and consultants to uncover the true physical, human and latent root causes associated with the unexpected closing of the coach car doors. The side doors RCA team found the physical root cause of the failure to be located in the door system software code, a finding that was never suspected following years of trouble with the side doors.

The Results: As a result of this finding, the door manufacturer corrected the software and issued revised software to be installed fleet-wide. The human and latent root causes were addressed through the development of a standard operating procedure and training for conductors and crew on the proper operation of side doors

(Proceedings of 2008 ASME/IEEE Joint Rail Conference, *Root Cause Analysis of Passenger Side Door System at AMTRAK*, April 22 – 24, 2008, Wilmington, DE, USA)