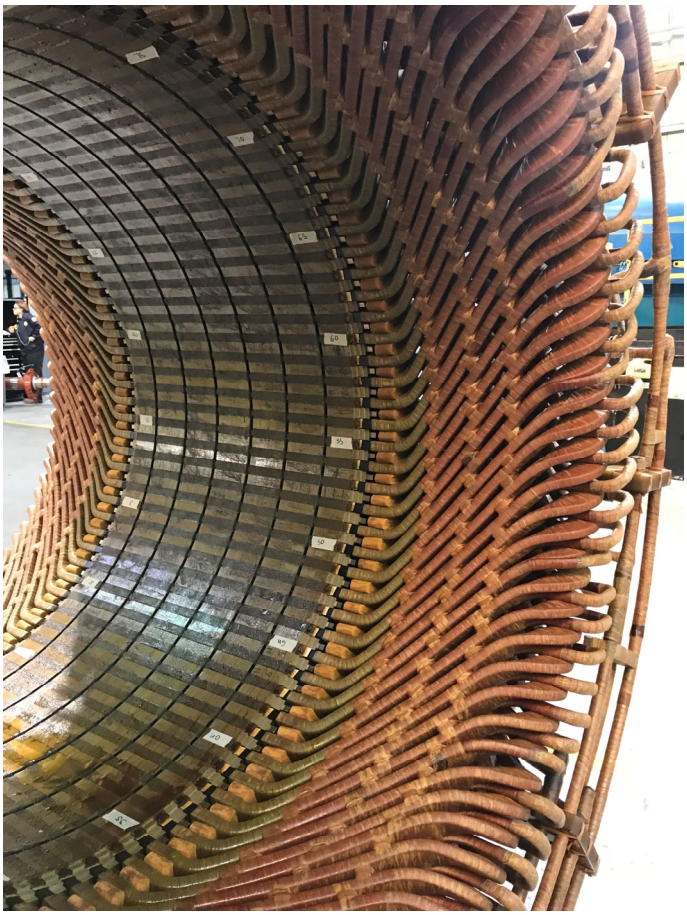
Electric Motor
and Contracting

Nuclear Industry Update

ISSUE NO: 1 | 3RD QUARTER - 2022 | EMC NIU-1 – FIRST ADDITION!



INTRODUCTION

Electric Motor and Contracting (EMC) has become the premier electric motor/generator and pump repair company for nuclear units throughout the US and Canada. From both nations, we have serviced or are repairing equipment from 54 (or 93%) of the 58 operating nuclear sites of all types, sizes, and ratings, including Safety Related, EQ, and Contaminated equipment.

We want to leverage our wide range of experiences and diverse footprint in the nuclear industry to provide our customers with key lessons learned and industry trends related to electric motors / generators and pumps. This will allow EMC to better support nuclear industry initiatives on improving equipment reliability and enhancing preventative maintenance strategies.

INPO IER 21-4

Vendor Oversight and Parts Quality issues on Page 2. We all have a role supporting the safe and reliable operation of our nuclear units.

INDUSTRY TRENDS

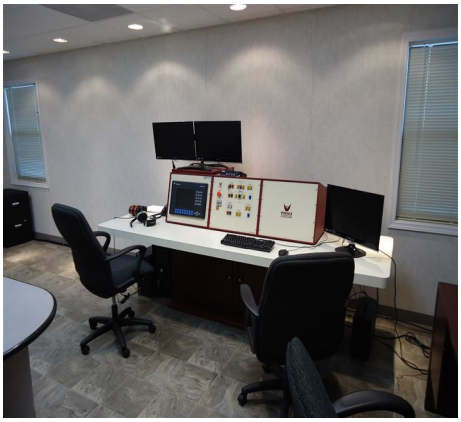
Fuel Handing, Crane and Elevator Motor issues on Page 2. Is periodic lubrication and run-to-maintennace the right strategy? We will discuss; you should evaluate.

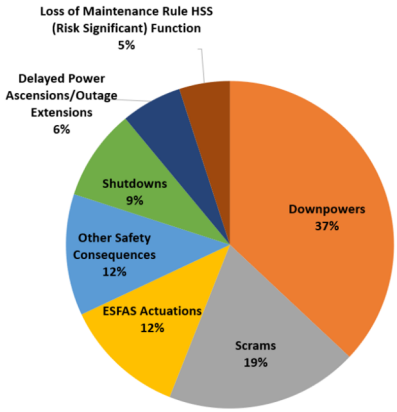
NEW SERVICES AVAILABLE

We have resources and space available for you, see page 2. Do you need HP support and a nice, cool, clean area to work on contaminated equipment? See what EMC has to offer.

ISSUE NO: 1 | 3RD QUARTER - 2022 | EMC NIU-1 – FIRST ADDITION!

Inadequate vendor oversight and inferior quality continues to plague the nuclear industry, resulting in lost revenue, unplanned shutdowns, and downpowers. While EMC was not a part of any of the issues recently recognized in IER 21-4, we do understand that we are vulnerable to many of the same failures. EMC has evaluated this IER with our customers and taken major steps to improve our customers' ability to remote monitor critical motor testing and test runs. EMC has also developed KPIs to provide to our customers to support performance monitoring which are presented to many nuclear sites quarterly.

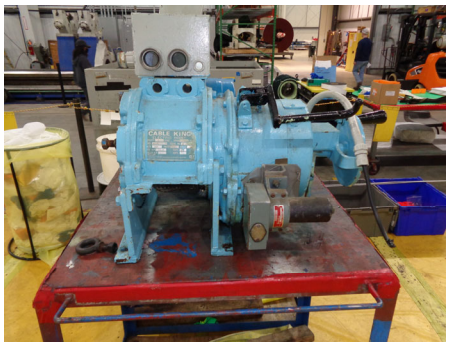


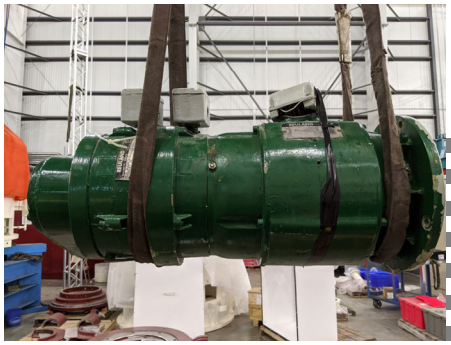


Nuclear Industry Trends – We have recently seen an increasing number of failures in Fuel Handing Equipment, Cranes, and Elevator Motors causing issues and outage delays. Due to these pieces of equipment not being safety related, or critical to power generation, they tend to be put in the 'run-to-maintenance' category with minimal (mostly lubrication) PMs being performed. Many of these components are original equipment, have no or limited spare parts, and are obsolete. These motors have also rarely been replaced or upgraded over the years, and many are 50+ years old.

- **Fuel Handling Manipulator Cranes and Upender Gearbox Motors**
- **Polar Crane and other Containment Crane Motors**
- **Containment, Turbine Building, and Auxiliary Building Elevator Motors.**

Although most of this equipment has minimal operational hours, the age, environmental conditions, and potential impact to nuclear safety and outage schedules should be evaluated. EMC has now had several customers with emergent failures on these pieces of equipment requiring emergency overtime repairs and resulting in critical delays in their outage schedule. **We recommend each nuclear customer evaluate the age and condition of these components** to see if more thorough PMs can be performed during non-outage (low risk/low impact) timeframes.





NEW SERVICES AVAILABLE

EMC has recently worked with several nuclear customers and OEMs to provide supplemental Health Physics Techs, Machine Shop Services, Lifting and Rigging, and Engineering support for nuclear site projects. Anything from Outage Mock-Ups and Just-in-Time-Training to Contaminated Machining, Repairs, and Welding can be performed in our clean, well lit, and air-conditioned areas. We recently supported Reactor Vessel Lower Internal Water Shield Tank Mock-Ups and JITT with great success.