Michael Leyderman

Professional Engineer

Philadelphia, PA - Email me on Indeed: indeed.com/r/Michael-Leyderman/2b5d573cd0b5333c

Design and engineering of fluid systems of nuclear power plants.

WORK EXPERIENCE

Professional Engineer

URS Corporation - Princeton, NJ - June 1988 to May 2013

Pennsylvania
Professional Affiliations
American Society of Mechanical Engineers
American Nuclear Society

Senior Mechanical Engineer

Public Service Electric & Gas - Salem County, NJ= - March 1995 to July 1996

Responsible for preparation of design change packages (DCPs) associated with various HVAC safety related systems such as Control Area A/C system, Fuel Handling Building ventilation, Auxiliary Building ventilation, etc. Duties included engineering and design of the modified HVAC systems consisting of design analysis, 10CFR50.59 Safety Evaluations, modification instructions, field installation and testing support; preparation and review of procurement specifications for fans, dampers, review and acceptance of vendor drawings and documents, etc.
Selected modifications included Control Area A/C System (CAACS) upgrade, Control Area Emergency A/C System (EACS) Cooling Coils condensate drain line water seal loop; Fuel Handling Area Heating Coils freeze protection; Turbine Building Exhaust Fans replacement, etc.
Lead Mechanical Engineer, Chiller Upgrade Project. Responsible for the overall project, including modifications to the reactor building, turbine building and control structure chillers. Responsibilities included development of the project scope documents, design documents for modification packages in accordance with PP&L procedures and standards; major engineered procurement, vendor drawings review; design verification and preparation of safety evaluations.
Performed validation of the HPCI/RCIC systems acceptability, controlling parameters and design features in supporting the reactor thermal power uprate. Prepared minor modifications associated with the station power uprate, including RCIC Turbine Steam Admission Valve and Feedwater Valve Trim replacement.
Niagara Mohawk Power Corporation, United Engineers & Constructors, Nine Mile Point Nuclear Power Plant, Task Leader
Responsible for fluid system hydraulic calculation and evaluation for 600 MW boiler water reactor. Responsible for system performance evaluation, recommendations for modification, providing engineering services to produce hydraulic models of various plant cooling water systems to verify system pump capability to meet system requirements and HXs performance evaluation, developing system flow requirements, determining if required flow is available to remove design basis heat loads, hydraulic and heat transfer analyses.
Thermal Fluids Analysis Group, United Engineers & Constructors Senior Mechanical Engineer
Thermal/hydraulic analyses of fluid systems, including analyses of problems in area of fluid mechanics, heat transfer, thermodynamics associated with nuclear plant piping systems. Two-phase critical flow, fluid frictional losses, turbulent flow calculations including control valve sizing and analyses for fluid systems. Evaluation of design criteria for safety and relief valves. Analyses of safety-related systems and design verification.

(f), assisting Nuclear Licensing

NSSS/BOP

Over 40 years experience in design and engineering of fluid systems for nuclear and fossil power plants. Over 30 years experience in the nuclear industry, including systems engineering (NSSS/BOP), design basis development, and plant condition evaluation (PWR and BWR plants), including nuclear power plants uprating. Expertise includes the complete engineering cycle with regard to analyses of nuclear safety-related systems, design and systems engineering, configuration management and project engineering. Special expertise in thermal/hydraulic analyses associated with nuclear plant performance, availability and reliability, 10CFR50.59 safety evaluation preparation, safety/relief and control valve application for nuclear power plants. Evaluation of NSSS/BOP equipment and component capabilities associated with the Reactor Power Uprate and plant operating conditions for the uprated power.

Expertise includes reviewing the DCD, FSAR and Technical Specifications and their verification for consistency with design documents pursuant to 10CFR50.54(f), assisting Nuclear Licensing in preparation responses to the NRC generic letters and bulletins to ensure compliance to DCDs, FSARs, codes, standards and regulatory requirements. Familiar with the most NRC regulatory guides, ASME Codes, ANSI and industry standards.

URS Corporation Experience (Nuclear Projects):

US-APWR Standard Plant, Dominion North Anna Unit 3 and MNES CPNP Units 3&4, Consulting Engineer

Responsible Engineer for development of the Safety Injection System (SIS) Design Package for the system detailed design, Piping & Instrumentation Diagrams (P&IDs) and design calculations. Responsible Engineer for preparation, development, review and verification of the tasks associated with the US-APWR Standard Plant, MNES CPNP Units 3 & 4, NRC COLA RAI's for the CCWS, ESWS. Preparation and review of the NA3 COLA Change Request # NA3-09-2057, including SOFs and supporting evaluations, including review of the Heat Loads on the ESWS/UHS during LOCA and Safe Shutdown Conditions. Review of the MHI Design Package for the US-APWR Essential Service Water System.

Consulting Engineer

DTE Fermi

Responsible Engineer for preparation DIRs, DTRs, FTRs and supporting evaluations for the DTE Fermi-2 MUR Project, including Service Water System, Turbine Auxiliaries Closed Cooling Water System, BOP Power Cycle Mechanical Performance.

Consulting Engineer

GE/Hitachi Nuclear Energy

Responsible for evaluation and design verification of various auxiliary systems within the Nuclear Island of the ESBWR Nuclear Plant, including Reactor Component Cooling Water, Chilled Water, Make Up Water, Condensate Storage and Transfer, Service Air and Instrument Air, High Pressure Nitrogen Supply Systems, in order to support the final issue of the Design Control Document (DCD) and COL Application for the Dominion North Anna Site. In addition, responsibilities include design and engineering of the Equipment and Floor Drain System (EFDS) for the

Responsible Engineer

ESBWR Nuclear Plant - Philadelphia, PA

and the Reactor Component Cooling Water System (RCCWS).

Carolina Power & Light (CP&L), Shearon Harris Nuclear Power Plant, Power Uprate Project, Senior Mechanical Engineer

Responsible for review and evaluation of the NSSS systems, equipment and component capabilities to support the Harris Nuclear Plant (HNNP) Unit 1 Power Uprate Program, which allow operation of the plant at NSSS thermal power of 2912 MWt. The scope of the NSSS assessment at power uprate conditions included preparation of the engineering evaluation reports for the following systems: Safety Injection (SIS), Residual

Heat Removal (RHRS), Chemical and Volume Control (CVCS) and Containment Spray (CSS). Duties included review and revisions of the safety-related calculations and design change packages to ensure that the NSSS functional requirements for power uprate conditions are satisfied and the system critical parameters meet the system design basis for power uprate operation.
Philadelphia Electric Company (PECO Energy) - Nuclear Group Headquarters, Limerick Generating Station and Peach Bottom Atomic Power Station, Senior Mechanical Engineer
Responsible for preparation of 10CFR50.59 reviews and safety evaluations for various modifications at Peach Bottom Atomic Power Station (PBAPS) as part of the Thermo-Lag Reduction Project, including Emergency Switchgear and Battery Rooms, Fan Room and Recirculation Pump M-G Set Room (Lead Engineer). These modifications provide upgraded fire detection and suppression systems in areas of the plant where an upgrade to a three-hour fire rated encapsulation for safe shutdown cables is not feasible. Responsible for preparation for various modifications for the Limerick Generating Station to support the Turbine Retrofit Project.
Responsible for preparation of an engineering analysis for a Station Blackout (SBO) to determine a mechanical loading timeline and RCIC/ HPCI System loads as the basis for the design adequacy assessment of the Peach Bottom Station 125 VDC Batteries in accordance with NUMARC 87-00.
Responsible for mechanical and HVAC portion of the Chemistry Laboratory Expansion of Limerick Generating Station, including development of design documents, safety evaluations and FSAR updates, calculations, vendor drawings, etc.
Responsible for dispositions of Nonconformance Reports related to hardware and other deficiencies with various safety related systems of Limerick Generating Station (LGS) and Peach Bottom Atomic Power Station (PBAPS), 10CFR50.59 Determination and Safety Evaluations, initiating changes to the Updated Final Safety Analysis Reports (UFSARs), preparation of Engineering Work Requests (EWRs). Responsible for preparation of modification packages associated with nuclear/mechanical systems/components, including HPCI room cooler ESW return line replacement with new isolation valves, corrosion monitoring system of RHR Heat Exchangers for LGS. Primary responsibilities included preparation and review of technical specifications for nuclear safety related valves.

Nuclear Power Plant, Systems Engineering Department, Senior Mechanical Engineer

New York Power Authority

NYPA), NYPA Nuclear Engineering, Design Engineering, Indian Point 3 Nuclear Power Plant, Systems Engineering Department, Senior Mechanical Engineer
Responsible for technical support to the assigned plant modifications in the form of reviewing, directing and coordinating project activities.
Responsible for monitoring engineering, design and construction activities, including preparation and review of Engineering Change Notices (ECNs), FSAR updates, accepting the work performed by design organizations, providing support in preparation and execution of tests for plant modifications.
Responsible for turnover of various safety related modified plant systems and components to the Operation Department following a complete modification; responsible for modification closeouts, ensuring that documents such as design calculations, analyses and plant drawings.
The selected modifications included elimination of the Boron Injection Tank (BIT), replacement of the Reactor Coolant Pump Header motor operated valves (MOVs) functioning as containment isolation valves; replacement of the isolation valve for the Charcoal Filter Dousing Unit; addition of the Automatic Starting Diesel Compressor to the Station Air System, retrofit of the Main Boiler Feed Pump Discharge Stop Valves (MOVs) in response to the NRC GL89-10; replacement of the Pressurizer PORVs; replacement of the Temperature Control Valve for the Non-Regenerative Heat Exchanger; replacement of the Pressurizer Spray Valves.
As a Senior Contract Engineer within the Systems Engineering Department, responsible for providing technical support to the System Engineers (NSSS Group), including preparation and review of nuclear safety-related calculations, design basis documents for safety related systems, operability determinations, extent of condition system reviews, operating and surveillance procedures, resolving discrepancies between plant configuration

and design documents, systems walkdowns, revisions of emergency operation procedures, etc. Provided support for preparation of responses to the NRC inspections, including the following systems: Reactor Coolant, Safety Injection, Containment Spray, Component Cooling, Spent Fuel Pit Cooling, Chemical and Volume Control, Nitrogen Supply, Containment Isolation, Auxiliary Feedwater, etc.
Responsible for validation of the IP3 FSAR Update to resolve discrepancies between the FSAR and plant procedures, for preparation 10CFR50.59 Nuclear Safety Evaluations (NSEs) and Nuclear Safety and Environmental Impact (NSEI) Screens.
Responsible for a response to NRC GL96-06 in evaluation of thermally induced overpressurization of isolated piping. Responsible for review and evaluation of safety-related pump minimum flow requirements.

Sequoyah, Brown's Ferry and Watts Bar Nuclear Power Plants, Senior Mechanical Engineer

Tennessee Valley Authority

Provided technical direction and consultation to the Heat Cycle and NSSS Engineering Department, including independent review of calculations, specifications and design criteria for nuclear/ mechanical components.
Provided support to plant modifications and refueling outage activities, and performance of plant condition and safety evaluation, including analyses of nuclear plant fluid systems. Established and evaluated safety-related system's functional requirements and performance criteria for Sequoyah Nuclear Plant restart test program.
Provided responses to NRC Generic Letters, Bulletins, Information Notices on various technical issues.
Fossil Projects: Saltend Cogeneration Project, 1200 MW Combined Cycle Cogeneration Plant, England, Senior Mechanical Engineer
Responsible for engineering support and activities for the plant startup, including preparation and review of Engineering Change Notices (ECNs), providing design recommendations for plant modifications and equipment adjustments. Selected major tasks included:
-Modification of the plate heat exchangers of the Condenser Exhaust Vacuum Pump Skid to achieve the required cooling water design flow through the vacuum pump cooler.
-Modification of the Process Steam ASME Code Safety Relief Valves to meet the requirements of the British Petroleum (BP) Chemical Site adjacent to the plant (not to exceed 20 barg supply pressure to the BP facility).
-Modification of the condensate piping (water loop seal and a steam trap) -associated with the Gland Steam Condenser in order to achieve satisfactory continuous operation of the condenser.
-Verification of the installation requirements for the large butterfly valves (18 inches to 66 inches) and compatibility of piping connections.

Senior Mechanical Engineer

Sithe Edgar Development, LLC - Weymouth, MA

Responsible for design and engineering of various essential systems and equipment, including preparation and review of specifications, procurement activities, bid evaluation, vendor drawings and documents review, engineering calculations and design verification. Primary responsibilities included engineering activities for the following mechanical systems and equipment:
-Fuel Gas Supply System and major equipment, including Fuel Gas Compressors, Scrubbers, Coalescent Filters, pressure control valves, etc.
-Feedwater Heaters for the Heat Recovery Steam Generators (HRSG) designed to heat the condensate supply to the Low Pressure (LP).
Carbon Dioxide Storage and Supply Skid designed for the Purge System for the Gas Turbine and Steam Turbine Generators.