

SRMC Engineering Job Catalog

In association with the

Reaching Engineers At the Development Years (READY) Program

M. J. Cantu

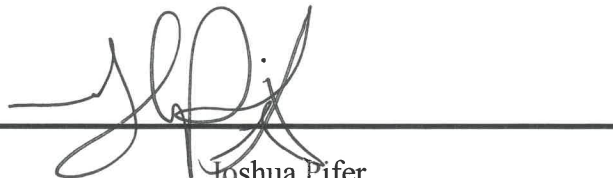
A.W. Jung

Approvals:



Dr. Thomas Burns

Liquid Waste Chief Engineer, SRMC



Joshua Pifer

READY Program Lead, SRMC

Signatures



Michael Cantu, Rotation Pillar Lead



Andrew Jung, Rotation Pillar Manager

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Acronyms, Terms, and Descriptions

For a more complete list of Site Acronyms see either

<https://www.srs.gov/srmc/assets/documents/SRMC-Acronyms-Abbreviations.pdf>

<https://srs.gov.sharepoint.com/sites/SRSAcronymList>

2H or 16H	242-16H Evaporator (Primarily processes DWPF Recycle Waste)
3H or 25H	242-25H Evaporator (Primarily processes Sludge Batch Washing Waste)
ACI	American Concrete Institute
AISC	American Institute of Steel Construction
ALARA	As Low As Reasonably Achievable
ASD	Allowable Stress Design
ASME	American Society of Mechanical Engineers
ASP	Accelerated Salt Processing (project that supports SWPF throughputs)
AWS	American Welding Society
BOP	Balance of Plant
C.E.	Civil Engineering
CFR	Code of Federal Regulations
CGD	Commercial Grade Dedication
Ch.E.	Chemical Engineering
CHA	Consolidated Hazards Analysis (analysis process for safety basis development)
CMT	Computer program Modification Tracker
Comp. Sci.	Computer Science
CORESim	System Engineering Simulation Software (LWO wide bottleneck analysis)
CPC	Chemical Processing Cell (DWPF Cell that houses many of the processing tanks)
CSI	Construction Specifications Institute
CSSX	Caustic Side Solvent Extraction (chemical process for Cesium removal)
CSTF	Concentration, Storage, and Transfer Facility (often also called as “Tank Farm”)
DA	Design Authority
DCF	Design Change Form
DCP	Design Change Package

DCS	Distributed Control System
DOE	U.S. Department of Energy
DSA	Documented Safety Analysis
DSS	Decontaminated Salt Solution
DWPF	Defense Waste Processing Facility
E.E.	Electrical Engineering
EFCOG	Energy Facility Contractor's Group
EIR	External Independent Review
EPA	U.S. Environmental Protection Agency
ERD	Emergency Response Data
ETP	Effluent Treatment Plant (Processes evaporator overheads)
GoldSim	Environmental and Engineering Risk Analysis Software
HTF	H-Tank Farm
HVAC	Heating, Ventilation, and Air Conditioning
IAW	In Accordance With
IBC	International Building Code
ICE	Independent Cost Estimate
IEEE	Institute of Electrical and Electronics Engineers
IT/OT	Information Technology/Operational Technology
IPC	Integrated Project Control
KPMG	Klynveld Peat Marwick Goerdeler (External Auditing Company)
LRFD	Load And Resistance Factor Design
LTLS	Leak Tight Liner System
LWO	Liquid Waste Operation
M.E.	Mechanical Engineering
MCC	Motor Control Center
MCNP	Monte Carlo N-Particle Transport Code (Nuclear Engineering Tool)
MicroStation	A Computer Aided Drafting and Design (CADD) Program

MPC	Main Process Cell
MR	Management Reserve
MST	Mono Sodium Titanate (Chemical used in ARP process)
MT	Modification Traveler
N.E.	Nuclear Engineering
NCR	Non-Conformance Reports
NEC	National Electric Code
NFPA	National Fire Protection Association
NRC	U.S. Nuclear Regulatory Commission
OLI Systems	Chemical System Simulation Software
OSHA	Occupational Safety and Health Administration
P&ID	Piping and Instrumentation Diagram
PA	Performance assessments
PDD	Program Description Document
PI Data	Process Instrument Data
PI system	Process Information System
PLC	Programmable Logic Controller
PORFLOW	Ground Water Flow Simulation Software
R&D	Research and Development
REA	Request for Engineering Assistance
ROMP	Risk and Opportunity Management Plan
RSS	Raw Salt Solution
SA	Special Analyses
SAT	Systematic Approach to Training
SC	Safety Class
SCALE	Standardized Computer Analyses for Licensing Evaluation (Computer Software)
SCDHEC	South Carolina Department of Health and Environmental Control
SCT	Shielded Canister Transporter

SDF	Saltstone Disposal Facility
SDU	Saltstone Disposal Unit
SPF	Smart Plant Foundation
SPF	Saltstone Production Facility
SRNL	Savannah River National Lab
SRS	Savannah River Site
SS	Safety Significant
SS	Saltstone
SSC	System, Structures, and Components
STAAD	Structural Analysis Design Software
STE	Shift Technical Engineer
SWPF	Salt Waste Processing Facility
TE	Technical Evaluation
TF	Tank Farm
TRM	Tele Robotic Manipulator (A DWPF Canyon instrument for in-cell manipulation)
TSR	Technical Safety Requirement
U.S. NRC	United States Nuclear Regulatory Commission
UPS	Uninterruptable Power Source
USQ	Unreviewed Safety Question
UWMQE	Unreviewed Waste Management Question Evaluations
VDC	Volts Direct Current
WAC	Waste Acceptance Criteria
WCS Online	Waste Characterization System Online

Introduction and Overview

This document is intended to assist new hires and READY participant by providing a high-level overview of the various SRMC organizations' functions. This tool should be used as a starting point for exploring potential job placements and/or rotation options.

This catalog encompasses all major engineering job organizations. A brief description of each organization is provided, along with a list of skills and characteristics. The skills listed for individual organizations are meant to highlight major software and manuals that the group interacts with regularly. Previous knowledge of listed skills is not required. The characteristics listed for each organization are meant to provide general insight into a group's daily environment, level of interaction with other groups inside and outside their facility, as well as to get a feel for the various type of possible projects an organization has to offer. It is **strongly recommended** that the participant reach out to managers of interested organizations to obtain the most accurate group overview. This document may overlook ongoing and upcoming projects that might impact the participant's decision.

The following tables represent the **preferred backgrounds** (**highlighted**) of each organization. Individuals that do not have the mentioned background are also welcome to submit preferences to those groups. A list of previous and/or current READY participants can be provided via the Job Rotation Lead on request. Opportunities outside of this list may be discussed by reaching out to the appropriate manager. The manager of each organization can be found by searching the organization code (e.g. WRJ110) on InSite using the Phone Search function (the orange phone icon).

NOTE: See the Liquid Waste System Plan (SRMC-LWP-2023-00001, electronically on Liquid Waste Organization Document Library in HCL Notes) as a resource to help understand the Liquid Waste Operation as a whole.

Group A: Facility & System Engineering

The following groups focus on providing direct engineering support for facility operations. Engineers work closely with process equipment, monitoring performance, managing maintenance, and developing and reviewing modifications and/or improvements.

A WRJ110: Elec/Ctrls Systems Eng (DWPF)	Ch.E. & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
A WRJ120: Mech. Systems Eng (DWPF)	Ch.E. & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
A WRJ130: Rapid Resp.& Maint. Eng (DWPF)	Ch.E. & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
A WRJ150: Melter Engineering (DWPF)	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
A WRJ160: CPC Systems (DWPF)	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
A WRJ210: Salt/Sludge (TF)	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
A WRJ220: Evaporator & ETP (TF)	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
A WRJ230: Rapid Resp. & Maint. Eng (TF)	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
A WRJ260: Systems (TF)	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
A WRJ920: Maint Support (SWPF)	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
A WRJ930: SWPF Engineering (SWPF)	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
A WRJ940: Mechanical/Electrical Eng (SWPF)	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
A WRJ950: End Stream Delivery Eng (SWPF)	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.

Group B1: Engineering Design

The following groups specializes in providing engineering designs for engineering projects across the facilities. Engineers consult facilities to provide engineering design solutions for the proposed projects.

B1 WRJB10: Structural Mechanics	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
B1 WRJB20: Civil – Structural	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
B1 WRJB30: Electrical Design	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
B1 WRJB40: Instruments & Controls Design	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
B1 WRJB50: Mechanical Design	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
B1 WRJB60: Plant Design	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.

Group B2: Project Engineering

The following groups focus on implementing engineering projects that support the liquid waste operation. Engineers help manage projects and campaigns through interfacing with facility operations.

B2 WRJ410: Waste Retrieval New Style (Closure)	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
B2 WRJ420: Sampling, Isolation, & Grouting (Closure)	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
B2 WRJ430: Waste Retrieval Old Style (Closure)	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
B2 WRJ710: SDU Projects	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
B2 WRJ760: Startup & Testing Support	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.

Group C1: Chemical Process Engineering

The following groups focus on providing facility wide chemical processing support. Interfaces with facilities and other engineering groups to provide technical chemical analyses for ongoing operations and emerging situations in the facilities. Implements the chemical and radiological safety basis control programs.

C1 WRJ140: Process & Regulatory (DWPF)	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
C1 WRJ240: Process Eng & Facility Support (TF)	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
C1 WRJ270: Safety Programs & Regulatory (TF)	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
C1 WRJ310: Flowsheet Development	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
C1 WRJ910: Process Engineering (SWPF)	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.

Group C2: Information Technology and Operational Technology (IT/OT)

The following groups focus on developing, maintaining, and improving the process controls, technology, and applications involved in facility operations as well as engineering functions. The groups often interface with a wide variety of counterparts, including but not limited to, direct facility, engineering, operations, maintenance, administrative, and procedural support.

C2 WRJ810: Cyber Security and Facility Support	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
C2 WRJ820: OT Engineering and Process Support	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
C2 WRJ830: IT/OT Software Eng and Support	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
C2 WRJ840: IT/OT Programs and Innovation	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.

Group C3: Engineering Programs

The following groups focus on site wide engineering programs that impact all aspects of the liquid waste operation. Provides programmatic support to help dictate conduct of operations and facilitate implementation.

C3 WRJ330: Nuclear Safety	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
C3 WRJ600: Engineering Programs	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
C3 WRJ610: Procurement Engineering	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
C3 WRJ650: Structural Authority & Inspection	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
C3 WRJA00: Fire Protection Engineering	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.

A – Facility & System Engineering

WRJ110: Electrical and Controls Systems Engineering (DWPF)

Preferred Background	Ch.E. & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Responsible for the various electrical systems in the facility such as the backup diesel generators, 125 Volts Direct Current (VDC) station batteries, uninterruptible power supplies (UPS), cathodic protection, essential lighting, 480 V motor control centers (MCC), 13.8 KV/480 V load centers, public address (PA), closed circuit television (CCTV) camera system and Delta V distributed control system (DCS). Maintains and uses documents such as single lines and schematics. Utilizes the system health program to watch over and maintain their systems. Interfaces with operations, planning, maintenance, and construction for system maintenance, design and procurement of new and modifications to equipment, and stand-alone projects.

Skills: MicroStation, Smart Plant Foundation (SPF), Asset Suite, PI Processbook, knowledge of IEEE standards and National Electric Code (NEC)

Characteristics: The Electrical and Control Systems Group is a diverse group encompassing a variety of experience levels. It thrives in a collaborative environment encouraging cross system knowledge. The group supports facility operations via walkdown, field troubleshooting, component obsolescence reviews, and small to mid-size projects. The workplace setting primarily a blend of office, occasional in field support, require communication with various work groups.

WRJ120: Mechanical Systems Engineering (DWPF)

Preferred Background	Ch.E. & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Provides engineering support for the Mechanical Systems at DWPF. Areas include the Shielded Canister Transporter (SCT), Canyon Equipment, Facility Ventilation Systems, Main Process Cell (MPC) Crane, in-cell cranes and hoists and Balance of Plant (BOP) Mechanical Systems (air, feed chemicals, water and fire protection). Utilizes the system health program and Process Information (PI) system to watch over and maintain their systems. Interfaces with operations, planning, maintenance, and construction for system maintenance, design and procurement of new and modifications to equipment, and stand-alone projects.

Skills: MicroStation, SolidWorks, SPF, Asset Suite, PI Processbook, Knowledge of ASME B31.3

Characteristics: Involves Field Walkdowns, office setting, team projects, multigroup communication, individual projects, Short Term Projects, Long Term Projects, system ownership

WRJ130: Rapid Response & Maintenance Engineering (DWPF)

Preferred Background	Ch.E. & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Provides facility wide response to maintenance issues and operations support for all engineering disciplines in DWPF. Defines work scope to support repairs and/or troubleshooting activities. Develops design modifications to resolve equipment issues. Specific challenges include designing specialty tools or equipment to support remote DWPF Canyon operations, outage activities, or inspections.

Skills: MicroStation, SPF, Asset Suite, PI Processbook, SolidWorks

Characteristics: Involves Field Walkdowns. Hands-on involvement in all areas of engineering at DWPF and high amount of direct interfacing with facility operations and maintenance. Teamwork and individual work. Mostly short-term projects and not much interfacing communication. Work involves responding to the immediate facility issues and supporting all other engineering groups as necessary.

WRJ150: Melter Engineering (DWPF)

Preferred Background	Ch.E. & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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The DWPF Melter vitrifies radioactive tank waste with glass frit and pours the glass-radionuclide mixture into canisters for safe long-term storage. The group oversees the Melter operation, components and systems that directly support the Melter, glass quality and the filling of canisters. Responsible for the overall health of the Melter, Melter Off-gas, Melter Feed, Melt Cell Tele Robotic Manipulator (TRM) and Melter Cooling Water Systems. The group utilizes the system health program and PI system to watch over and maintain their systems. Maintains and improves processes through collaboration with DWPF operations, design services, construction, and maintenance groups.

Skills: MicroStation, SPF, PI Processbook, Asset Suite

Characteristics: Involves Field Walkdowns, Office Setting, Team Projects, Individual Projects, Multigroup communication, Long Term Projects, Short Term Projects, System Ownership

WRJ160: CPC Systems (DWPF)

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Oversees all the main vessels and associated/supporting equipment (includes transfer pumps, sample pumps, agitators, heating/cooling coils) in the Chemical Processing Cell (CPC) in DWPF. The CPC chemically balances the waste stream to ensure acceptable glass quality. Responsible for primary air purge and safety grade nitrogen purge to the CPC vessels. The group utilizes the system health program and PI system to watch over and maintain their systems. Monitors process equipment, maintains technical basis documentation, develops troubleshooting and maintenance strategies, and performs evaluation of proposed facility activities.

Skills: MicroStation, Smart Plant Foundation (SPF), PI Processbook, Asset Suite, Puridium, 1YManual (electrical & mechanical procedures)

Characteristics: CPC Systems is a multidisciplinary group involved in a variety of individual/team effort based, short- and long-term projects. The diversity of work allows for knowledge in cross-functional areas, interfacility and intrafacility communication, and collaboration in an office setting. The CPC Engineering group supports facility operations through field walkdowns, design changes, design implementation, technical reviews, emergent facility process support, system health, and maintenance of the involved systems.”

WRJ210: Salt/Sludge (TF)

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Oversees the assembly of Salt & Sludge Batches. Oversees the Tank Farm System Health Program. The group utilizes its knowledge to assemble, prepare, and qualify the salt and sludge batches feeding SWPF and DWPF respectively. Also, engineers are part of project teams responsible for developing strategies, designs, and procedures to support the removal of liquid, sludge solids and salt from H-Area and F-Area tanks to support salt and sludge batch planning and compilation. Engineers oversee and manage implementation of system health program requirements, Engineers interface with operations, construction, maintenance, radiological engineering, radiological protection, design services, and project controls.

Skills: MicroStation, Smart Plant Foundation (SPF), PI Processbook, Process Support Calculations, Mechanical & Chemical Troubleshooting, Asset Suite, Design Authority/Design Services Integration

Characteristics: Involves Field Walkdowns, Office Setting, Team Projects, Individual Projects, Multigroup communication, Long Term Projects, Short Term Projects, Technical/Calculation-based work, Facility/Structural work.

WRJ220: Evaporator & ETP (TF)

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Oversees the 16H (also called 2H), 25H (also called 3H) Evaporators and the Effluent Treatment Project (ETP). The evaporators reduce the overall waste volume within the liquid waste operation and produce concentrated waste used in salt batch development. The ETP receives and further treats overheads from the evaporators and low activity material from the Canyon facilities, so that it can be released to the Savannah River.

Skills: MicroStation, SPF, Asset Suite, PI Processbook

Characteristics: Involves Field Walkdowns, Office Setting, Team Projects, Individual Projects, Multigroup Communication, Interfacility Communication, Short Term Projects, Long Term Projects, Technical/Calculation based work

WRJ230: Rapid Resp. & Maint. Engineering(TF)

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Provides facility-wide response to emergent issues for all engineering disciplines in the Tank Farms. Collaborates with other engineering groups and facility work groups (i.e. operations, maintenance, facility support, work planning, etc.) to quickly assess and manage facility demands. Provides engineering support and develops technical documentation for facility to resolve immediate issues. Responds to Requests for Engineering Assistance (REA) from maintenance, operations, and work planning teams. Regularly supports field walkdowns and troubleshooting alongside facility work groups.

Skills: MicroStation, SmartPlant Foundation, Asset Suite, PI Processbook, 1Y Manual (Conduct of Maintenance), 2S Manual (Conduct of Operations), 1Q Manual (NCRs, QA Program)

Characteristics: Team & Individual Projects, Multigroup & Interfacility Communication, Short Term Projects, Long Term Projects, Field Walkdowns, Troubleshooting

WRJ260: Systems (TF)

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Oversees Vital Safety Systems and Balance of Plant systems for Tank Farm operation to ensure safety basis requirements are met and reliable performance of equipment is maintained. Monitors safety and support equipment, develop design changes and technical requests, maintains technical basis documentation, develops trouble-shooting and maintenance strategies, maintains system health and performs evaluation of proposed facility activities. Key systems include ventilation, waste transfer systems, cooling water, electrical distribution, standby diesel generator, steam, conductivity probes, radiation monitoring and alarm instrumentation.

Skills: MicroStation, SPF, Asset Suite, PI Processbook, Puridiom, 1YManual (electrical & mechanical procedures), 2S (operation procedures), 1Q (NCRs, Out of calibration), E7 (Conduct of Engineering)

Characteristics: Team troubleshooting activities, Multigroup communication, Field walkdowns and task overviews, Emergent path forward development.

WRJ920: Maintenance Support (SWPF)

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Provides day to day support for operations, maintenance, laboratory and engineering. Maintenance Engineers are responsible for all Preventive Maintenance activities including creating and revising job plans, adjusting the frequency, working with vendors, creating procurements/SLAs, and providing technical support for all Predictive and Corrective Maintenance activities. Maintenance Engineers review facility equipment status and provide recommendations for maintenance/repair methodology and process improvement. They are also responsible for creating and maintaining all spare parts for the facility by determining critical spares, min/max values, and establishing the spare parts in the required database. Additionally, maintenance engineers create Material/Service Requests to establish min/max for spare parts, restock the J-Area Warehouse, and order any other items that may be needed for the facility, including SLAs and service MSRs.

Skills: Smart Plant Foundation (SPF), Delta V/DCS, Puridiom, Maximo, Calculations, Configuration Management, Database Management, Systems Thinking, Problem Solving, Troubleshooting

Characteristics: Involves Field Walkdowns, Office Setting, Team Projects, Individual Projects, Multigroup communication, Interfacility communication, Short Term Projects, Technical/Calculation-based work, Facility/Structural work, Equipment Health, Reliability Engineering

WRJ930: SWPF Engineering (SWPF)

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Provides direct support to Operations, Maintenance, Laboratory, Radiation Protection and all Engineering Groups. The STE is the technical advisor to the Shift Operations Manager, and works to maintain safety basis compliance, monitor and adjust plant parameters, screen planned work, assist with process optimization efforts, and manages the facility's sampling program. This group requires well rounded individuals who are interested in all facets of facility operations.

Skills: Smart Plant Foundation (SPF), Delta V/DCS, Puridiom, Maximo, Calculations, Configuration Management, Systems Thinking, Problem Solving, Troubleshooting, Conduct of Operations, Technical Safety Requirements, Lockout/Tagout

Characteristics: Involves Field Walkdowns, Control Room Setting, Multigroup communication, Interfacility communication

WRJ940: Mechanical/Electrical Engineering (SWPF)

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Provides engineering support for Mechanical Systems at SWPF and ESD. Areas include Facility Ventilation Systems, Facility Electrical Systems, Material Handling (e.g. cranes), Laboratory Equipment, Process Instrumentation, and Balance of Plant (BOP) Mechanical Systems (e.g. air, water, fire protection). Utilizes system health program to oversee and maintain system components. Regular interface with operations, planning, maintenance, and construction organizations for system maintenance, designs, procurements, and modifications.

Skills: SolidWorks, MicroStation, SPF, Maximo, PI, Knowledge of ASME and NFPA Codes (e.g. B31.3, NFPA 70), Delta V/DCS, Calculations, Configuration Management, Database Management, Systems Thinking, Problem Solving, Troubleshooting

Characteristics: Involves Field Walkdowns, Office Setting, Team Projects, Individual Projects, Multigroup communication, Interfacility communication, Short Term Projects, Long Term Projects, Technical/Calculation-based work, Design Changes, System Health Monitoring

WRJ950: End Stream Delivery (ESD) Engineering (SWPF)

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Provides Process Engineering support to Saltstone Processing Facility, Saltstone Disposal Facility and Effluent Treatment Facility (ETF). Saltstone Processing Facility consists of a dry feed system, a salt solution system and process equipment and piping to mix the 2 feeds and transfer it to the Saltstone Disposal Facility. The Saltstone Disposal Facility contains multiple different Saltstone Disposal Units (SDU's) and equipment to maintain the integrity of the SDU's. ETF collects low level waste streams, chemically treats, filters, Ion Exchanges and process the waste through a set of evaporators. The concentrated waste is transferred to TK-50 while the Treated water is released to the environment. ETF also monitors several basins and either treats this run off or releases to the environment, depending on sample results.

Skills: MicroStation, SPF, Maximo, PI, Knowledge of ASME and NFPA Codes (e.g. B31.3, NFPA 70), Delta V/DCS, Calculations, Configuration Management, Database Management, Systems Thinking, Problem Solving, Troubleshooting

Characteristics: Involves Field Walkdowns, Office Setting, Team Projects, Individual Projects, Multigroup communication, Interfacility communication, Long Term Projects, Short Term Projects, Technical/Calculation-based work, Design Changes, System Health Monitoring

B1 – Design

WRJB10/20: Structural Mechanics/Civil-Structural & Architectural Design

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Provide Structural Engineering tasks such as the analysis of static and dynamic loads, design of structures with a variety of materials, foundation and anchorage design, structural analysis for accident conditions, preparation of Construction Specifications Institute (CSI) specifications, and review of supplier documents. Tasks utilize a working knowledge of STAAD and various National Codes and Standards (IBC, AISC, ASD and LRFD, ACI, AWS, NFPA, OSHA). Engineers often perform walk downs in the field and apply resourceful thinking while researching, modifying, and applying existing methods and technology to complex engineering problems.

Skills: Microstation, Design Control, Industry and DOE requirements/standards, Knowledge of Conventional Structural Technology, STAAD

Characteristics: Involves Field Walkdowns, Office Setting, Individual Projects, Multigroup Communication, Short Term projects, Technical/Calculation/Software Based Work

WRJB30: Electrical Design

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Provide engineering analysis, walkdowns, design development, and design output document generation for electrical systems across facilities. Products include: Single Line Drawings; Electrical Equipment Lists; Control System Design; Electrical Equipment Specifications; Bulk Material Specifications; Circuit/Raceway/Wiring/Connection Design; Grounding; Heat Tracing; Fire Detection.

Skills: MicroStation, Knowledge of NEC code requirements.

Characteristics: Field Walkdowns, Teleworking environment, Individual/Team Projects, Short Term Projects, Long Term Projects, Project Engineering and facility engineering support, Inter-discipline/ multi-organization communication, Develop conventional engineering solutions for technical problems, Electrical Design Development, Perform Calculations, studies and analysis, Familiarity with National codes and Standards, Extensive use of MicroStation

WRJB40: Instrument & Controls Design

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Provide engineering analysis, walkdowns, design development, and design output document generation for instruments and control systems across facilities. Products include: P&IDs; Control Logics; Loop Diagrams; Instrument Indices; Setpoint Lists; Instrument and Control Valve Specifications; DCS and PLC Design; Instrument Location and Installation Design; Panel Layouts; and Vendor Document Review.

Skills: MicroStation, PLC and DCS experience.

Characteristics: Field Walkdowns, Teleworking environment, Individual/Team Projects, Short Term Projects, Long Term Projects, Project Engineering and facility engineering support, Inter-discipline/ multi-organization communication, Develop conventional engineering solutions for technical problems, Instrument and Control System Design, Perform Calculations, studies and analysis, Familiarity with National codes and Standards, Extensive use of MicroStation

WRJB50/60: Mechanical/ Plant Design

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Provide engineering analysis, design development, and design output documents for mechanical systems of the liquid waste facilities. Products include: Process Flow Diagrams, Piping and Instrumentation Diagrams, System Descriptions, Mechanical Equipment Lists, Specification Documents, ASME Code Design and Evaluation, and Vendor Document Reviews. Performs analysis on mechanical equipment such as failure analysis, accident analysis, finite element analysis, and pipe stress analysis. Designs Material Handling, Fire Protection, and HVAC. Tasks utilize a working knowledge of National Codes and Standards, including ASME B31.3, NFPA101, and ASME N509/510.

Skills: MicroStation, Bentley, Design Control, Industry and DOE requirements/standards, Knowledge of Conventional Mechanical Technology

Characteristics: Field Walkdowns, Teleworking environment, Individual/Team Projects, , Short Term Projects, Long Term Projects, Project Engineering and facility engineering support, Inter-discipline/ multi-organization communication, develop conventional engineering solutions for technical problems, Mechanical Design Development, Perform Calculations, studies and analysis, Familiarity with National codes and Standards, Extensive use of MicroStation, Schedule driven.

B2 – Project Engineering

WRJ410: Waste Retrieval New Style Tanks (Closure)

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Engineers are part of a project team responsible for developing strategies, designs and procedures to support the removal of liquid, sludge solids and salt from H-Area tanks to support salt and sludge batch planning. Waste Retrieval includes both removing the bulk of the waste and final heel removal to allow for final residual characterization prior to waste tank grouting. Develops technical documents including Modification Travelers, Task Requirements and Criteria documents, strategy documents, and Design Change Forms (DCFs). Reviews and approves engineering calculations and Design Change Packages (DCPs). Engineers interface with construction, maintenance, radiological engineering, radiological protection, design services, and project controls.

Skills: MicroStation, SPF, PI Processbook, Asset Suite, Design Authority/Design Services Integration

Characteristics: Involves Field Walkdowns, Office Setting, Team Projects, Individual Projects, Multigroup communication, Short Term Projects, Long Term Projects, Facility/Structural work, Project Engineering and facility engineering support, Review/Approve engineering calculations drawings, designs, work instructions, and procedures

WRJ420: Sampling, Isolation, & Grouting (Closure)

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Specializes in challenges during the closure of waste tanks and other structures. Tasks include characterization sampling of waste tanks, utilizing new technology such as robotics, developing/execution of strategies for the closure of Tank Farm structures (waste tank, ancillary structures etc.). Develops technical documents including MTs, Task Requirements and Criteria documents, strategy documents, and DCFs. Reviews and approves engineering calculations and DCPs. Engineers interface with construction, maintenance, radiological engineering, radiological protection, design services, and project controls.

Skills: MicroStation, SPF, PI Processbook, Asset Suite

Characteristics: Involves Field Walkdowns, Office Setting, Team Projects, Individual Projects, Multigroup communication, Short Term Projects, Long Term Projects, Facility/Structural work, Project Engineering and facility engineering support, Review/Approve engineering calculations drawings, designs, work instructions, and procedures

WRJ430: Waste Retrieval Old Style Tanks (Closure)

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Engineers are part of a project team responsible for developing strategies, designs and procedures to support the removal of liquid, sludge solids and salt from F-Area tanks to support salt and sludge batch planning. Waste Retrieval includes both removing the bulk of the waste and final heel removal to allow for final residual characterization prior to waste tank grouting. Develops technical documents including Modification Travelers, Task Requirements and Criteria documents, strategy documents, and Design Change Forms (DCFs). Reviews and approves engineering calculations and Design Change Packages (DCPs). Engineers interface with construction, maintenance, radiological engineering, radiological protection, design services, and project controls.

Skills: MicroStation, SPF, PI Processbook, Asset Suite, Design Authority/Design Services Integration

Characteristics: Involves Field Walkdowns, Office Setting, Team Projects, Individual Projects, Multigroup communication, Short Term Projects, Long Term Projects, Facility/Structural work, Project Engineering and facility engineering support, Review/Approve engineering calculations drawings, designs, work instructions, and procedures

WRJ710: Saltstone Disposal Unit (SDU) Projects

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Provide DA Engineering support for SDU Projects. Engineers provide technical support during the SDU's 10 through 12 site preparation, cell and Balance of Plant (BOP) design, construction, engineered equipment procurement, construction, start up and facility turn over. Responsible for the technical quality of all Engineering Documents, required to support Critical Decisions (CD) 1 through 4, including those required by the South Carolina Department of Health and Environmental Control (SCDHEC). The project scope includes SDUs 10 ~ 12 with each SDU requiring activities including, but not limited to: Geotechnical characterization of the selected SDU sites; Site preparation including excavation, grading, storm water and drainage management; Constructing a nominal 30-million-gallon capacity cell; Installation of a Leak Tight Liner System (LTLS) for primary containment and chemical resistance to the interior; Installation of safety and monitoring systems for parameters such as temperature, fill height, and ventilation; Tie-ins to existing grout transfer and drain water return, electrical and control systems.

Skills: MicroStation, SPF, Asset Suite, Puridiom

Characteristics: SDU Design Authority engineers' interface with construction forces, quality assurance, facility personnel, and other Subject Matter Experts and designers, to devise and implement effective solutions. Knowledge of the SDU design and ensuring the Safety Basis is reflected in the constructed SDUs is a key responsibility, along with completing technical

reviews and updating specifications, and technical documents. Performance of field support, walkdowns, and observation is also an important part of SDU Design Authority engineer support.

WRJ760: Startup & Testing Support

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Certified Test Engineers provide testing of plant modifications and SRMC-specific engineered equipment. Test scope includes oversight of Factory Acceptance Testing for complex equipment and field testing of SRMC Facility modifications following the Conduct of Testing Procedures in the S4 Manual. Test Engineers understand design requirements and convert them into test procedures that ensure the designed performance of equipment and modifications.

Skills: SPF, Asset Suite, Puridiom, Test Certification, Equipment Troubleshooting

Characteristics: Work involves interfacing Mechanical, Electrical, and Control Logic information for a system test, Field Walkdowns, Test procedure writing, Interface with Operations, Maintenance, IT/OT, Engineering, and Construction, Field Testing, Operations is our customer

C1 – Chemical Process Engineering

WRJ140: Process & Regulatory (DWPF)

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Evaluates and monitors DWPF processes to ensure compliance with DSA and TSRs. Reviews sample results from process tanks to determine chemical addition volumes needed to meet processability and glass quality requirements, and for early detection of adverse trends. Responsible for interface with the CSTF facility with respect to recycle stream characterization and requirements, CPC chemical additions, glass quality management, recycle management, salt processing, Waste Acceptance Criteria (WAC) assurance, and any process changes for safe and continuous operation. Engineers function as DA (Design Authority) Engineers and at times represent facility engineering, providing interface and technical reviews for various organizations including SRNL, System Planning/Flowsheets, and engineers from SWPF, Tank Farm, and Saltstone.

Skills: PI Processbook, Process Support Calculations.

Characteristics: Supports both day-to-day operations (analyzing sample results, providing chemical addition volumes for each batch, and tracking process trends) and process improvement initiatives, Office Setting, Multigroup Communication, Interfacility Communication, Technical/calculation-based work, Troubleshooting activities, DSA development support

WRJ240: Process Eng & Facility Support (TF)

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Evaluates in-tank additions and transfers in accordance with Tank Farm programs and waste transfer procedures to ensure compliance with the DSA and TSRs. Work scope includes reviewing sample data integrity, utilization of the Waste Characterization System (WCS) Online, waste tank to waste tank transfer approvals (ETAF), tank emergency response data (ERD) development, flammability and corrosion program facility execution; performing evaluations and reviews to ensure implementation of Safety Basis requirements, technical correctness, and operational efficiency for all procedures that direct liquid movement through waste tanks and transfer facilities.

Skills: Transfer procedures, ETAF/ERD, Flammability Evaluations, Corrosion Evaluations, Process Facility Interface

Characteristics: multigroup communication, interfacility communication, technical/calculation-based work, team troubleshooting activities

WRJ270: Safety Programs & Regulatory (TF)

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Responsible for development, maintenance, and implementation of the Program Description Documents (PDDs) and serves as the DA for Safety Basis Accident Scenarios. Work scope includes reviewing sample data integrity, maintenance of the Waste Characterization System (WCS) Online, flammability and corrosion program evaluations, and WAC compliance; performing evaluations and reviews to ensure implementation of Safety Basis requirements, and technical correctness.

Skills: WCS Online, WAC/WCP, Corrosion Control, Tank Farm Flammability, PDDs, DSA Accident Ownership

Characteristics: Office Setting, multigroup communication, interfacility communication, long term projects, technical/calculation-based work, DSA development support

WRJ310: Flowsheet Development & Engineering Integration

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Provides process and mechanical systems engineering support and sequencing for all facilities within the Liquid Waste program with the goal of optimizing the overall flowsheet in support of the SRMC mission at SRS. Products include documents/evaluations such as flowsheets, flammability calculations, material balances, salt/sludge batch qualification and management, optimization studies, sampling plans, and so on. These projects include, but are not limited to, waste removal via salt dissolution, Low-Temperature Aluminum Dissolution, DWPF NGA conversion, SWPF filtration improvements, Lag storage facilities, Hg reduction/removal studies and waste transfers throughout the various facilities with focus on enhancement opportunities to improve overall throughput for liquid waste operations.

Skills: OLI Systems (Chemical Stream analyzer), Safety Program/Process Calculations, PI Processbook, ASPEN, Smartplant Foundation (SPF), Problem Solving

Characteristics: Office Setting, occasional field walkdowns, Team Projects and Individual Projects, Multigroup communication, Interfacility communication, Short Term Projects, Long Term Projects, Technical/Calculation-based work, Facility work

WRJ910: Process Engineering (SWPF)

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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SWPF processes liquid radioactive waste by separating actinides and enriching cesium to feed DWPF and Saltstone for ultimate disposal. This is achieved by two unit operations: alpha sorption process and caustic side solvent extraction process. This group oversees plant operations and balance of plant supporting facilities utilizing the system health program. Monitors process and material handling equipment, maintains technical baseline documentation, develops troubleshooting and maintenance strategies, performs evaluations of proposed facility activities, and develops design changes as needed.

Skills: MicroStation, Smart Plant Foundation (SPF), Delta V/DCS, Puridiom, Maximo, Design Control, Calculations, Configuration Management, Database Management, Systems Thinking, Problem Solving, Troubleshooting, Knowledge of Industry and DOE Requirements/Standards

Characteristics: Involves Field Walkdowns, Office Setting, Team Projects, Individual Projects, Multigroup communication, Interfacility communication, Short Term Projects, Long Term Projects, Technical/Calculation-based work, Design Changes, System Health Monitoring

C2 – Operational Technology Engineering

WRJ810: IT/OT Cyber Security and Facility Support

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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This organization includes both the Cyber Security (WRJ811) and Facility Support (WRJ812) organizations.

Creates and maintains Cyber Security Accreditation Boundary documents, responds to DOE-HQ data calls and generates Risk Assessments and Plans of Action and Milestones. Performs log analysis of production systems and responds as appropriate to identified incidents. Performs validation of field changes and monitors production and development systems.

Provides field support for process control systems such as Delta V. Responsible for installation and maintenance of control equipment such as wired and wireless instrumentation, fiber optics, network interfaces, data loggers, and so on, as well as operating and maintaining 3D printers. Creates and maintains Cyber Security documentation and implements security requirements. Validates that proposed configurations of equipment will operate as expected in a development area. Performs configuration management and authentication of software changes. Assists with facility design and implementation.

Skills: Equipment Troubleshooting, Delta V, System Administration, Cyber Security, Configuration Management, Networking.

Characteristics: Involves Field Walkdowns, Office Setting, Team Projects, Individual Projects, Multigroup communication, Short Term Projects, Long Term Projects, Facility Troubleshooting and repair

WRJ820: DWPF, SWPF, Tank Farms, and End Stream Delivery OT Systems Engineering and Process Support

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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This organization includes the DWPF (WRJ821), TF (WRJ822), and SWPF/ESD (WRJ823) Operational Technology System organizations.

Maintains, designs, develops software used in DWPF, TF, SWPF and ESD Facilities, including modifying control schemes and creating automation sequences in distributed control systems (DCS), Programmable Logic Controllers (PLC) code, and PI data historian. This team is responsible for plant simulators used in testing and training across SRMC. The group also aims to reach an understanding of the facilities in their entirety to be able to work with Operations and Engineering to help solve problems across all disciplines.

Skills: Excel VBA, Delta V/DCS, SPF, System Management, Database Management

Characteristics: Involves Field Walkdowns, Troubleshooting, Office/Group Setting, Control System Hardware/Software Interactions, Design Review/Generation, Multigroup Communication/Interface, Team Projects, Individual Project Ownership, Problem Solving Opportunities, Long Term Projects, Quick Turnaround Facility Issue Response, High-Profile Facility Improvement Projects, Management Team Visibility Opportunities

WRJ830: IT/OT Software Engineering & Support

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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This organization includes both the Process Applications organization (WRJ831) and Support Software (WRJ832).

Designs, develops, and maintains software used across the liquid waste operation, to improve efficiency and drive innovation. Interfaces with facilities and engineering groups to provide software solutions that improve business processes. Applications range from complex to simple, including Waste Characterization System (WCS) Online, Slurry Mix Evaporator Acceptability, Input Deck, Lockout, SharePoint PCP sites, Maximo administration, and Power BI dashboards.

Skills: Data Analysis, Power BI Dashboard Creation, Web Development, Front End Development, SharePoint Development, Business Analysis, Reporting Tools, Database configuration, Software Quality Processes.

Characteristics: Creative solutions, Customer-oriented, Team projects, Individual projects, Strong communication skills with wide range of customers, Manages apps from cradle to grave. Self-disciplined, Agile and waterfall projects, Strong ownership and teamwork, Learning environment, Opportunity to elevate software development skills

WRJ840: IT/OT Programs & Innovation

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Oversees IT/OT Programmatic and Innovation. Programmatic efforts include schedule integration and strategic planning. Innovation includes technology evaluations, new product identification, prototyping, and pilot programs utilizing new technology for improvements.

Skills: Technology Deployment, Control Systems, Data Analysis, Continuous Improvement, Database Management, Communication Skills, Organization

Characteristics: Involves Field Walkdowns, Opportunities for On-Site and Remote Work Settings, Software Programming / Configuration, Data Analysis and Use of Advanced Data Analysis Tools including Process Analytics & Predictive Analysis, Opportunities for both Team and Individual Projects, Multigroup Communication, Interfacility Communication, Short Term Projects, Long Term Projects, Facility Improvements Initiatives, Programmatic Evaluations

C3 – Engineering Programs

WRJ330: Nuclear Safety

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Develops rules and guidelines for all LW Facilities in accordance with DOE standards, orders, and guidance that allow facilities to operate in ways that keep on-site and off-site receptors safe. This includes evaluating hazards for each facility, performing accident analyses, selecting controls, and establishing safety bases to ensure the safety of the employees and the greater community. Additionally, Nuclear Safety supports routine assessment to ensure these controls are implemented effectively within the facility.

Skills: Consolidated Hazards Analysis (CHA), Accident Analysis Calculations (e.g., accident Source Term, flammability time-to-LFL, ventilation requirements, MELCOR Accident Consequence Code System (MACCS)), Nuclear Criticality Safety Evaluations (e.g., Handbook comparisons, Monte Carlo N-Particle (MCNP), Standardized Computer Analyses for Licensing Evaluation (SCALE)), Radiation Shine Calculations (MCNP/SCALE), Instrumentation Uncertainty.

Characteristics: Office Setting, occasional field walkdowns, Team Projects and Individual Projects, Multigroup communication, Interfacility communication, Routine interface with DOE, Short Term Projects, Long Term Projects, Technical/Calculation-based work, Facility work for certain disciplines (i.e., SBRA, Nuclear Criticality Safety, Assessments)

WRJ600: Engineering Programs

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Develops and manages the engineering procedures and programs that ensure safe and accurate conduct. Responds to emerging procedural needs and approves/implements changes for modifications or new standards. Acts as point of contact and interfaces with DOE as well as program manager for Configuration Management.

Skills: Familiarity with Site procedures and standards, and National Codes and Standards.

Characteristics: Involves Field Walkdowns, Office Setting, Team Projects, Multigroup communication, Interfacility communication, Long Term Projects, Short Term Projects, Technical/Calculation-based work, Facility work

WRJ610: Procurement Engineering

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Develops and maintains guidance for compliance and cost-effective procurement of Safety Class (SC) and Safety Significant (SS) items. Reviews SC and SS item procurement, determines the preferred procurement strategy, performs technical evaluations of items, establishes methods of

verification and acceptance of items, and prepares Commercial Grade Dedication (CGD) Plans to provide reasonable assurance that the items will perform their safety function.

Skills: Commercial Grade Dedication (CGD), Technical Evaluation (TE)

Characteristics: Office Setting, Team Projects, Multigroup Communication, Interfacility Communication, Long Term Projects, Short Term Projects

WRJ650: Structural Authority & Inspection Engineering (SA&IE)

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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Assesses and confirms that the SC or SS System, Structures, and Components (SSCs) placed into service continue to meet their design functions for Structural Integrity throughout their lifecycle as defined by the DSA and the SRS structural Design Criteria as prescribed in Engineering Standard 01060. Project areas include Tank Top Loading, Critical Lifts, Crane Support, Structural Design, Walkways and Process Structures, and Seismic Space Interactions.

Skills: Knowledge of Structural Codes, Standards, and Procedures, Structural Integrity Program, In-Service Inspection Program.

Characteristics: Can involve physical walk down inspections of material conditions, loading calculations among other administrative program implementation activities.

WRJA00: Fire Protection

Preferred Background	Ch.E & N.E.	C.E.	Comp. Sci.	E.E.	M.E.
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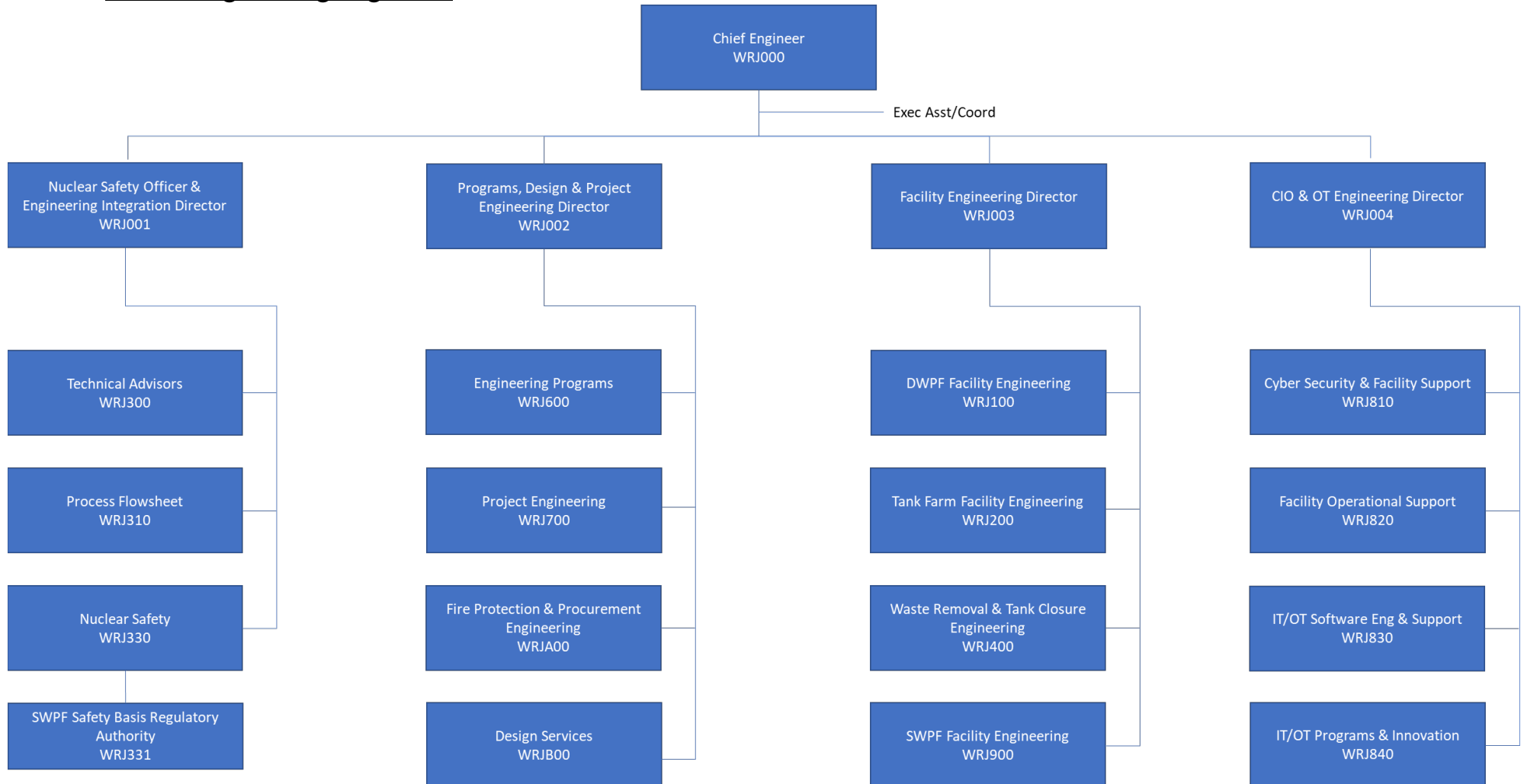
Develops and maintains the SRMC Fire Protection Program in accordance with DOE Orders and National Fire Protection Association Codes. Typical work activities include evaluating work packages and facility modifications for potential fire hazards and developing appropriate controls to ensure fire risk is addressed in all SRMC facilities.

Skills: Problem Solving, Hazards Analysis, Communication Skills, Application of Codes and Standards

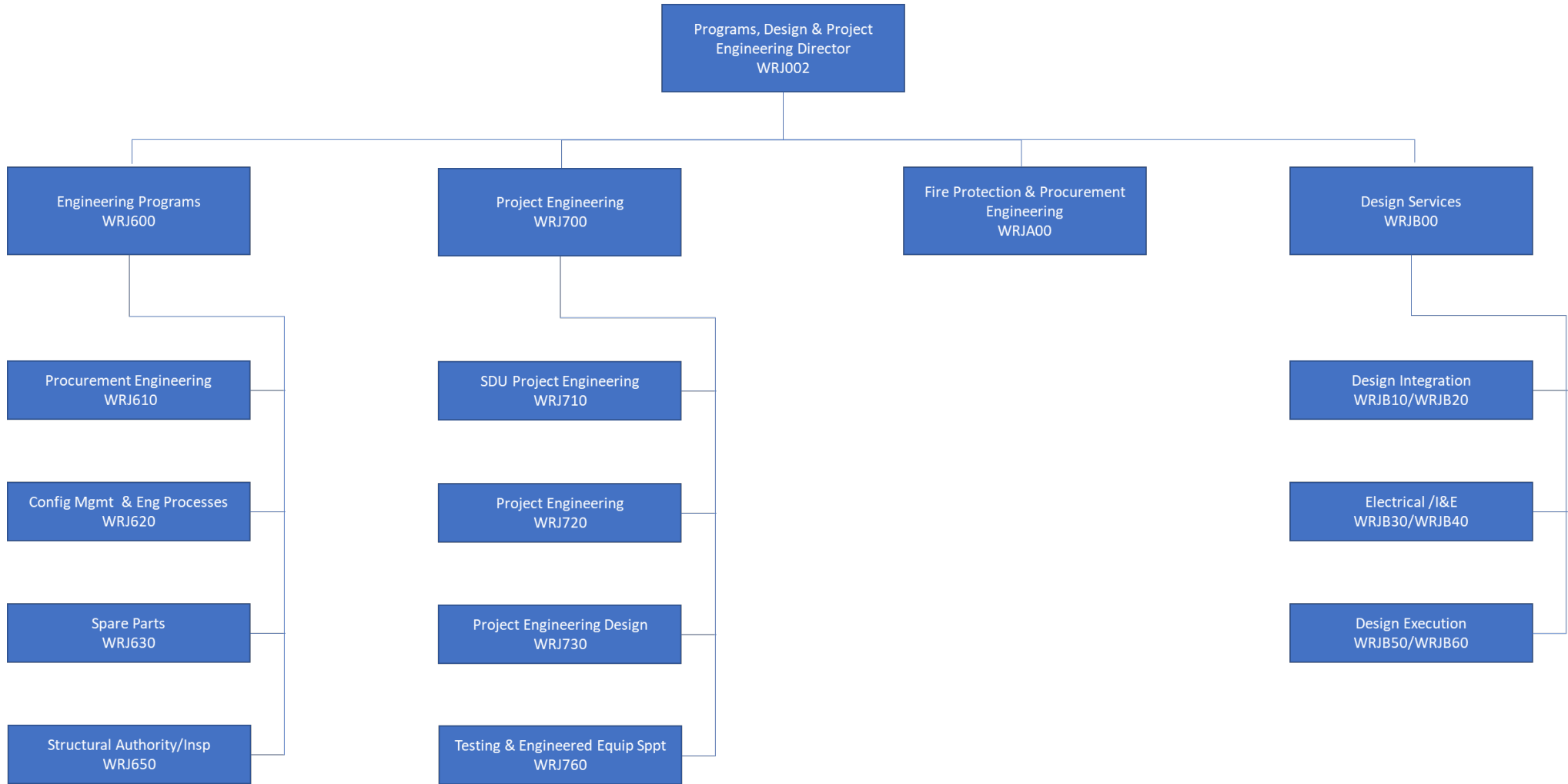
Characteristics: Involves Field Walkdowns, Office Setting, Team Projects, Multigroup communication, Interfacility communication, Short Term Projects, Long Term Projects, Technical/Calculation-based work, Facility work, Safety Basis support

Attachment 1: SRMC Organization Charts

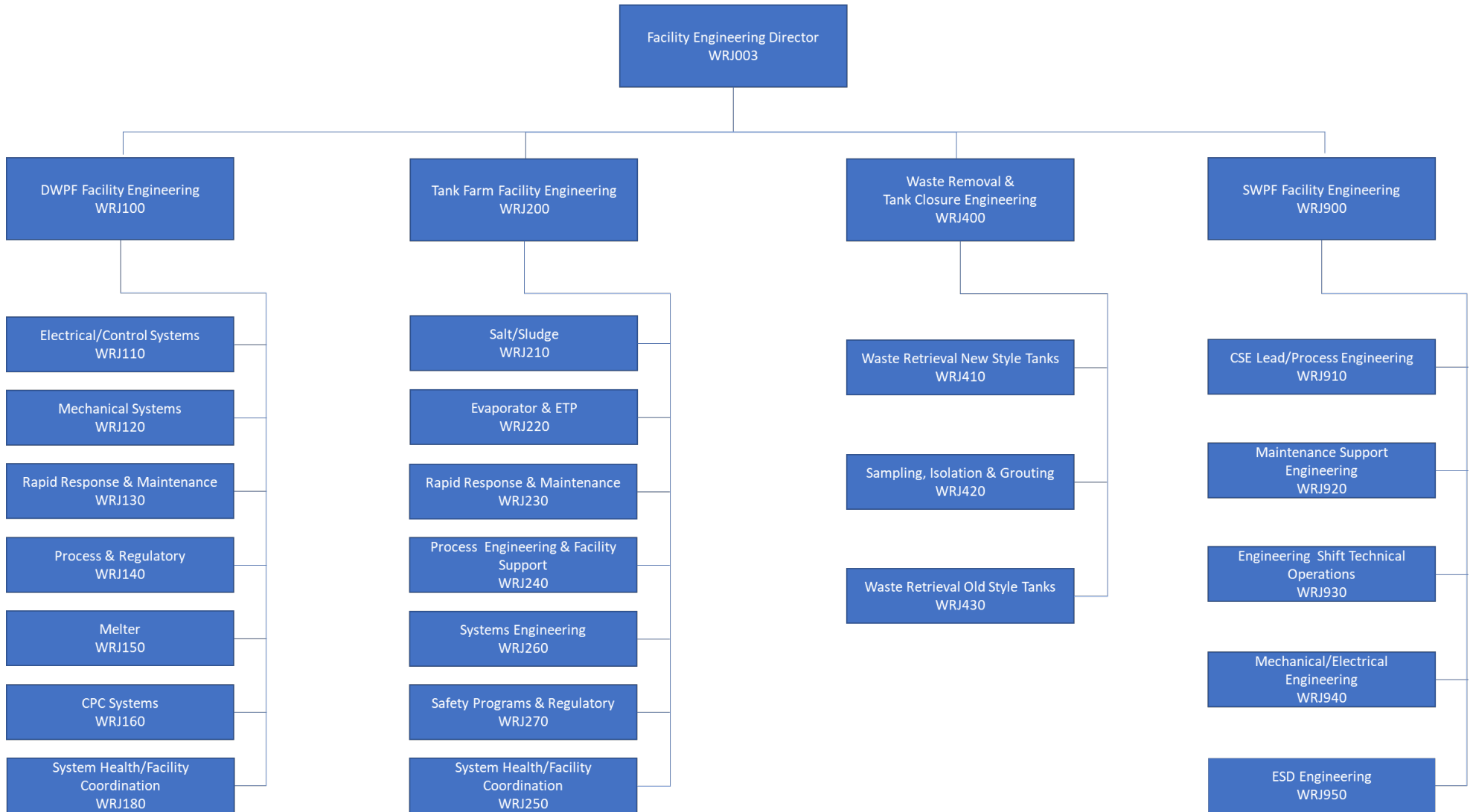
SRMC Engineering Org Chart



Programs, Design & Project Engineering Org Chart



Facility Engineering Org Chart



Operational Technology Engineering Org Chart

