

HISTORIC AMERICAN ENGINEERING RECORD

INDEX TO PHOTOGRAPHS

IDAHO NATIONAL ENGINEERING LABORATORY, HAER No. ID-33-J  
EBR-II Containment Building  
(Idaho National Laboratory, EBR-II Containment Building)  
Scoville Vicinity  
Bingham County  
Idaho

HAER photographs ID-33-J-1 through ID-33-J-61 are large-format exterior and interior views of the Containment Building. Interior views begin with the sub-basement and proceed to basement and operating levels. The photographer was Darren Clark, who took the pictures on August 27, 2009, and February 22, 2010, as noted.

ID-33-J-1 EBR-II. EXTERIOR CONTEXTUAL VIEW OF THE EBR-II REACTOR COMPLEX. CAMERA FACING NORTHWEST. FROM LEFT TO RIGHT, POWER PLANT (768), EBR-II CONTAINMENT BUILDING (REACTOR BUILDING (767), CONIFER TREE, TRUCK LOCKS FOR FUEL CONDITIONING FACILITY AND HOT FUEL EXAMINATION FACILITY BUILDING (765). FOUR STACKS SERVED FOSSIL-FUEL BOILERS, WHICH BURNED DIESEL FUEL. THE EBR-II FACILITY WAS ONE OF THE FIRST STEAM CO-GENERATION PLANTS IN IDAHO. DATE: AUGUST 27, 2009.

ID-33-J-2 EBR-II. EAST FACADE OF POWER PLANT. CAMERA FACING WEST. TWO STACKS WERE LATER ADDITIONS TO PLANT. AT RIGHT OF VIEW IS DOOR OPENING TO TRUCK LOCK AT FUEL CYCLE FACILITY (FCF). DATE: AUGUST 27, 2009.

ID-33-J-3 EBR-II. EXTERIOR FACADE OF CONTAINMENT BUILDING. CAMERA FACING NORTHWEST. ROLLUP DOOR AT LEFT OF VIEW IS PART OF POWER PLANT, PROVIDING ACCESS TO BOILERS. LADDER TO POWER-PLANT ROOF TO ITS LEFT IS ENCLOSED BY PERSONNEL SAFETY PROTECTION. BOX IN FOREGROUND IS RELATED TO HAZARD CLEAN-UP DURING DEMOLITION. LABEL SAYS, "DANGER CONTAINS ASBESTOS FIBERS. AVOID CREATING DUST. CANCER AND LUNG DISEASE HAZARD. AVOID BREATHING AIRBORNE ASBESTOS FIBERS." BOX IS READY FOR LANDFILL DISPOSAL. DATE: AUGUST 27, 2009.

ID-33-J-4 EBR-II. EXTERIOR DETAIL OF PERSONNEL DOORWAY INTO POWER PLANT AND CONTAINMENT BUILDINGS. CAMERA FACING NORTHWEST. HEALTH PHYSICISTS HAD AN OFFICE HERE. CONTAINMENT BUILDING IN CENTER OF VIEW. DOORWAY TO RIGHT OF TREES ENTERS FUEL CYCLE FACILITY OFFICE ANNEX, 765-A. DATE: AUGUST 27, 2009.

ID-33-J-5 EBR-II. CONTAINMENT BUILDING AND SODIUM BOILER BUILDING (766). CAMERA FACING SOUTHWEST. RECTANGULAR ATTACHMENT TO CONTAINMENT BUILDING AT LEFT OF VIEW CONNECTS TO FUEL CYCLE FACILITY. EQUIPMENT AIR LOCK (EQUAL) IS

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BELOW GRADE (OUT OF VIEW). ATTACHMENT HOUSES HOIST EQUIPMENT THAT LIFTED INTERBUILDING TRANSFER COFFIN FROM THE FCF HATCH IN THE AIR LOCK. FROM LEFT EDGE OF VIEW TO RIGHT: METAL BUILDING IS EBR-II COVER GAS CLEANUP SYSTEM BUILDING (795) BUILT IN 1978. (ARGON GAS COVERED THE LIQUID SODIUM PRIMARY COOLANT TO PREVENT SODIUM FROM CONTACT WITH AIR.) NEXT IS FREIGHT DOOR OF CONTAINMENT BUILDING. BUILDING AT RIGHT IS SODIUM BOILER BUILDING. BETWEEN IT AND CONTAINMENT BUILDING ARE YARD LINES (SUSPENDED PIPES) THAT CARRIED SECONDARY SODIUM COOLANT OR STEAM. DATE: AUGUST 27, 2009.

ID-33-J-6 EBR-II. DETAIL OF FREIGHT DOOR IN CONTAINMENT BUILDING, OPENED ONCE A YEAR DURING ANNUAL MAINTENANCE OR (INFREQUENTLY) FOR ENTRY OF LENGTHY EXPERIMENTAL GEAR LONGER THAN THIRTY FEET. FREIGHT DOOR IS AT NORTHEAST COMPASS POINT OF CONTAINMENT BUILDING. CAMERA FACING SOUTHWEST. BEYOND ROOF OF BUILDING 795 IS FCF CLOSURE OVER HOIST FOR TRANSFER OF INTERBUILDING COFFINS BETWEEN CONTAINMENT BUILDING AND FUEL CYCLE FACILITY. COVER GAS CLEANUP SYSTEM BUILDING (795) TO LEFT OF VIEW. TANK FOR LIQUID NITROGEN IS AT RIGHT OF FREIGHT DOOR, PART OF SODIUM PASSIVATION SYSTEM INSTALLED AFTER REACTOR SHUTDOWN. DATE: AUGUST 27, 2009.

ID-33-J-7 EBR-II. CONTAINMENT BUILDING, NORTHWEST SIDE. CAMERA FACING SOUTH-SOUTHEAST. DETAIL OF SUSPENSION FRAMEWORK FOR YARD LINES CARRYING SECONDARY SODIUM BETWEEN INTERMEDIATE HEAT EXCHANGER AND SODIUM-BOILER BUILDING. LIQUID NITROGEN TANK TO LEFT OF PIPING BLOCKS VIEW OF FREIGHT DOOR. SODIUM SHUT-DOWN COOLER IS NEAR RIGHT EDGE OF CONTAINMENT BUILDING. SHED ROOF IN CENTER OF VIEW COVERS REFRIGERANT CONDENSER AND ASSOCIATED WATER PIPING FOR NORTH WALL COOLING UNIT (AIR CONDITIONER) SERVING REACTOR OPERATING FLOOR. THIS ARRANGEMENT AVOIDED PLACING WATER LINES INSIDE THE REACTOR BUILDING. DATE: AUGUST 27, 2009.

ID-33-J-8 EBR-II. CONTAINMENT BUILDING WEST FACADE. CAMERA FACING EAST. STRUCTURES ON CONTAINMENT BUILDING AT LEFT AND CENTER OF VIEW ARE THE "NORTH" AND "WEST" SHUT-DOWN COOLER SYSTEM CHIMNEYS. THE SYSTEM REMOVED HEAT FROM PRIMARY TANK BY MEANS OF NATURAL CONVECTION. NaK (A SODIUM/POTASSIUM EUTECTIC ALLOY) CIRCULATED BETWEEN THE PRIMARY TANK AND THE COOLERS. PROJECTING FROM CONTAINMENT BUILDING AT RIGHT IS A PURGE EXHAUST, AN EMERGENCY FEATURE FOR USE IN EVENT OF FIRE. THE SYSTEM COULD REMOVE 5000 CUBIC FEET OF AIR PER MINUTE.

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OPERATORS TESTED THE SYSTEM, WHICH COULD BE OPERATED FROM OUTSIDE THE BUILDING, ONCE A YEAR. THE SYSTEM WAS NEVER REQUIRED TO BE USED. DATE: AUGUST 27, 2009.

ID-33-J-9 EBR-II. CONTEXTUAL VIEW OF WEST FACADES OF SODIUM BOILER PLANT AT LEFT, POWER PLANT BEYOND IT AT LEFT EDGE OF VIEW, AND CONTAINMENT BUILDING AT RIGHT. CAMERA FACING EAST. STEEL FRAMEWORK SUPPORTS YARD LINES. SMALLER-DIAMETER PIPES BROUGHT SECONDARY SODIUM COOLANT FROM REACTOR HEAT EXCHANGER TO BOILER PLANT AND THEN RETURNED IT. LARGE-DIAMETER DARK-COLORED PIPES TOOK STEAM FROM SODIUM BOILER PLANT TO TURBINES IN POWER PLANT. DATE: AUGUST 27, 2009.

ID-33-J-10 EBR-II. CONTEXTUAL VIEW WITH CAMERA FACING SOUTHEAST. CONTAINMENT BUILDING AT LEFT. OBLIQUE VIEW OF POWER PLANT BUILDING'S NORTH AND WEST FACADES. FRAMEWORK SUPPORTS YARD LINES FOR STEAM, FEEDWATER, AND BLOWDOWN FROM SODIUM BOILER TO POWER PLANT. SMALLEST PIPE (CLOSEST TO CAMERA) IS BLOWDOWN PIPE, WHICH TOOK MEASURED FLOW OF WATER FROM STEAM DRUM FOR CHEMISTRY CONTROL, IMPORTANT FOR PREVENTION OF CORROSION. MIDDLE PIPE, FEEDWATER, TRANSPORTED PRE-HEATED FEEDWATER (USUALLY AROUND 1500 psig, 550 DEGREES F.) TO STEAM DRUM. FROM DRUM, WATER FLOWED TO EVAPORATORS WHERE IT GAINED ENOUGH HEAT TO TURN TO STEAM. LARGEST PIPE IS MAIN STEAMPIPE, TRANSPORTING STEAM AT 1250 psig, 830 DEGREES F. TO POWER PLANT. DATE: AUGUST 27, 2009.

ID-33-J-11 EBR-II. DETAIL OF YARD LINES AND SUSPENSION FRAMEWORK. SMALL-DIAMETER PIPE ABOVE IS FOR SECONDARY SODIUM COOLANT. STEAM PIPING IS BELOW. CAMERA FACING WEST. CONTAINMENT BUILDING AT LEFT; SODIUM BOILER BUILDING AT RIGHT. PILASTER AND SLAB-CONCRETE WALL OF BOILER BUILDING WAS BUILT TO STAND IN THE EVENT OF AN EXPLOSIVE BLAST IN THE BOILER BUILDING. THE OPPOSITE WALL (NOT PICTURED HERE) WAS DESIGNED TO GIVE WAY FIRST, PREVENTING IMPACT FROM HARMING CONTAINMENT BUILDING OR PERSONNEL. NOTE ALL-CALL SPEAKER AT UPPER RIGHT CORNER OF STEEL FRAMEWORK. DATE: AUGUST 27, 2009.

ID-33-J-12 EBR-II SUB-BASEMENT. CAMERA FACING WEST. JUNCTION OF THREE CONSTRUCTION COMPONENTS NEAR BOTTOM OF CONTAINMENT BUILDING. CURVED STEEL SLAB IS MARKED "SUBBASEMENT." AT RIGHT, BIOLOGICAL SHIELD

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- SEPARATES STORAGE PIT (AND STORAGE TUBES BEYOND) FROM SUB-BASEMENT WORKING SPACE. NOTE THAT THIS PORTION OF BIOLOGICAL SHIELD IS FLAT, NOT CIRCULAR. EMPTY CABINET ONCE CONTAINED AN EMERGENCY RESPIRATOR. ROUND FLANGE PROTRUDING FROM BIOLOGICAL SHIELD IS DRAIN OUTLET FROM STORAGE HOLES. SQUARE FLANGE AT RIGHT EDGE OF VIEW IS DRAIN FROM STORAGE PIT. NEITHER DRAIN WAS EVER IN USE. DARK CIRCLE NEAR FLOOR AT BOTTOM OF CURVED PLATE IS FOAM-RUBBER SEALING MATERIAL MARKING A HOLE THAT PROCEEDS DOWNWARD ABOUT 18 INCHES TO EVACUATE WATER FROM BETWEEN BLAST-SHIELD WALLS, A FEATURE NEVER USED. DATE: AUGUST 27, 2009.
- ID-33-J-13 EBR-II SUB-BASEMENT. CAMERA FACING SOUTHWEST. DETAIL OF SOUTH STAIRWAY TO BASEMENT LEVEL. NOTE CONCRETE STEPS FOR FIRST FLIGHT, THEN TRANSITION TO STEEL STEPS MOUNTED ON CONCRETE PEDESTAL. FIRE-SUPPRESSION TANK NEAR HANDRAIL. EQUIPMENT AT LEFT OF CONCRETE STEPS IS PART OF STANDBY ARGON COMPRESSOR NO. 2. DATE: FEBRUARY 22, 2010.
- ID-33-J-14 EBR-II SUB-BASEMENT. CAMERA FACING EAST. COLUMN AT CENTER OF VIEW IS ONE OF FIVE MAJOR STRUCTURAL SUPPORT COLUMNS FOR CONTAINMENT BUILDING WORKING FLOORS. AT LEFT EDGE OF VIEW IS PART OF ONE OF TWO SHIELD COOLING EXHAUST FANS. AT RIGHT OF VIEW IS ONE OF TWO 20-TON AIR CONDITIONING UNITS THAT WERE BACKUPS FOR A LARGER 40-TON UNIT. BEHIND COLUMN IS BANK OF HIGH EFFICIENCY PARTICULATE AEROSOL (HEPA) FILTERS. SECOND SHIELD COOLING EXHAUST FAN IS OUT OF VIEW ON OTHER SIDE OF HEPA FILTER BANK. COMPARE WITH HAER DRAWING ID-33-J-110. DATE: FEBRUARY 22, 2010.
- ID-33-J-15 EBR-II SUB-BASEMENT. CAMERA FACING SOUTHEAST. AT LEFT OF VIEW, THIMBLE COOLING COMPRESSOR NO. 2. (COMPRESSOR NO. 1 IS OUT OF VIEW.) SIGN SAYS, "WARNING, THIS MACHINE STARTS AUTOMATICALLY." THIMBLES LOCATED WITHIN THE PRIMARY TANK HELD NUCLEAR INSTRUMENTS MONITORING REACTOR POWER. AT RIGHT OF VIEW ARE TWO SHIELD COOLING RECIRCULATING FANS; ONE WAS IN SERVICE, THE OTHER IN STANDBY. THEY CIRCULATED COOLED AIR TO THE BIOLOGICAL SHIELD, WHICH WAS ESSENTIAL TO MAINTAINING BOUND WATER IN THE SHIELD CONCRETE AND PREVENTING DETERIORATION AND POTENTIAL LOSS OF THE SHIELD'S VALUE. (OTHER FANS NOT IN VIEW EXHAUSTED SOME OF

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- THE AIR FROM THE REACTOR BUILDING TO PROVIDE  
TURNOVER OF FRESH AIR IN THE BUILDING AND TO  
MAINTAIN NEGATIVE BUILDING PRESSURE.) DATE: AUGUST  
27, 2009.
- ID-33-J-16 EBR-II SUB-BASEMENT. CAMERA FACING NORTHWEST.  
DETAIL OF BIOLOGICAL SHIELD WALL, WHICH SURROUNDS  
PRIMARY TANK. DATE: AUGUST 27, 2009.
- ID-33-J-17 EBR-II SUB-BASEMENT. CONTEXTUAL VIEW FACING NORTH  
END OF SUB-BASEMENT. NORTH STAIRWAY TO BASEMENT IS  
SIMILAR TO SOUTH STAIRWAY DESIGN, WITH BOTTOM  
STEPS FORMED OF CONCRETE AND TRANSITIONING TO  
STEEL STEPS. SIGN ON BIOLOGICAL SHIELD SAYS,  
"CAUTION, THIS AREA MAY CONTAIN INERT ATMOSPHERE.  
IF OXYGEN MONITOR ALARMS, LEAVE AREA IMMEDIATELY.  
NOTIFY SHIFT SUPERVISOR." AT RIGHT EDGE OF VIEW IS  
ARGON RECEIVER TANK. DATE: FEBRUARY 22, 2010.
- ID-33-J-18 EBR-II SUB-BASEMENT. COVER GAS (ARGON) PRESSURE  
CONTROL SYSTEM. CAMERA FACING EAST TOWARDS  
CONTAINMENT SHELL. LARGE TANK ABOVE IS ARGON  
RECEIVER TANK. IN EVENT OF A NUCLEAR ACCIDENT,  
ARGON GAS COVERING THE SODIUM IN THE PRIMARY TANK  
WAS EXPECTED TO ABSORB PART OF THE PRESSURE SURGE.  
RECEIVING TANK IS A RESERVOIR FOR SUCH A SURGE.  
SERIES OF VALVES OPENED AND CLOSED BY REMOTE  
OPERATION TO MAINTAIN COVER-GAS PRESSURE. DATE:  
AUGUST 27, 2009.
- ID-33-J-19 EBR-II BASEMENT. SOUTH STAIRWAY CONNECTING  
BASEMENT (BELOW) TO SUB-BASEMENT AND TO OPERATING  
FLOOR (ABOVE). CAMERA FACING SOUTHWEST TOWARDS  
CONTAINMENT SHELL. VIEWING WINDOW AT RIGHT LOOKS  
INTO STORAGE PIT. DATE: FEBRUARY 22, 2010.
- ID-33-J-20 EBR-II BASEMENT. CAMERA FACING NORTHWEST. DETAIL  
OF WINDOW INTO STORAGE PIT AREA. REFLECTION IN  
WINDOW IS STAIRWAY SHOWN IN ID-33-J-19. SIGN SAYS,  
"NOTIFY EBR-II HEALTH PHYSICS PRIOR TO OPENING  
DOOR." APPARATUS BESIDE WINDOW IS REMOTE HANDLING  
DEVICE. DATE: AUGUST 27, 2009.
- ID-33-J-21 EBR-II BASEMENT MEZZANINE. CAMERA FACING  
SOUTHEAST. FLOATING HEAD TANK, PART OF PRIMARY  
TANK COVER GAS SYSTEM. MAINTAINED BLANKET OF ARGON  
GAS OVER SODIUM IN PRIMARY TANK TO PREVENT  
INTRODUCTION OF AIR. TOP (SHINY) PORTION FLOATS ON

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- AN OIL RESERVOIR AND ACTS AS PISTON ON ARGON GAS BENEATH IT TO MAINTAIN TANK PRESSURE. CIRCULAR FIXTURE ABOVE IS CEILING HATCH TO OPERATING FLOOR IN EVENT OF NEED TO MAINTAIN OR REPLACE FLOATING HEAD. DATE: FEBRUARY 22, 2010.
- ID-33-J-22      EBR-II BASEMENT. CONTEXTUAL VIEW FACING SOUTH FROM NORTH STAIRWAY. AT LOWER VIEW IS OUTLINE OF FLOOR HATCH, GIVING ACCESS TO SUB-BASEMENT FROM HATCH IN OPERATING FLOOR ABOVE. BIOLOGICAL SHIELD IS AT RIGHT, WITH SHIELD-COOLING DUCT WORK WRAPPING AROUND IT. SIGN SIGNS "CAUTION, FLOOR LOAD 100 LBS. PER SQ. FT." ALONG LEFT OF VIEW IS RSCL (RADIOACTIVE SODIUM CHEMISTRY LOOP) EQUIPMENT: FROM LEFT TO RIGHT, THE THREE DOORWAYS AT FLOOR LEVEL ARE CELLS A, B, AND C. ABOVE CELLS IS RSCL PIPE GALLERY. AT UPPER LEFT EDGE OF VIEW IS VENTILATION EQUIPMENT PLATFORM. DATE: FEBRUARY 22, 2010.
- ID-33-J-23      EBR-II BASEMENT. DETAIL OF RSCL CELLS C AND B, WITH CAMERA FACING NORTH NORTHEAST (OPPOSITE DIRECTION FROM ID-33-J-22). PIPE GALLERY ABOVE CELL DOORWAYS. "GUILLOTINE DOORS" SLIDE DOWN FROM ABOVE. DATE: AUGUST 27, 2009.
- ID-33-J-24      EBR-II BASEMENT. CAMERA FACING EAST. DETAIL WITHIN RSCL CELL A SHOWS CRAMPED QUARTERS AND LEAD SHIELDING BRICKS. DATE: AUGUST 27, 2009.
- ID-33-J-25      EBR-II BASEMENT. CAMERA IS FACING SOUTH TOWARD PURIFICATION CELL DOOR ACCESS, OUT OF VIEW. THE ENTRANCE WAS CALLED A SHIELDED OR LABYRINTH ENTRANCE. FIRST SHIELD DOOR ON RIGHT LEADS TO RSCL CELL D. BEYOND, PARTLY OPEN DOOR LEADS TO RSCL CELL E. CYLINDERS ON FLOOR AT LEFT, AGAINST THE OUTSIDE WALL OF THE BUILDING, ARE MET-L-X CONTAINERS (NOW OUT OF SERVICE), FOR SYSTEM DESIGNED TO PUT OUT A SODIUM FIRE IN ANY OF THE RSCL CELLS. THREE OF THE VALVES FOR DIRECTING MET-L-X TO APPROPRIATE LOCATION ARE NEAR CEILING WHERE CORRIDOR OPENS TO THE RIGHT. DATE: FEBRUARY 22, 2010.
- ID-33-J-26      EBR-II BASEMENT. DETAIL OF RSCL CONTROL PANEL. CAMERA FACING EAST. DATE: AUGUST 27, 2009.

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- ID-33-J-27 EBR-II BASEMENT. PURIFICATION CONTROL PANEL. INSTRUMENT CENTER NO. 3. CAMERA FACING NORTH. SIGN SAYS, "CAUTION, THIS AREA MAY CONTAIN INERT ATMOSPHERE. IF OXYGEN MONITOR ALARMS LEAVE AREA IMMEDIATELY. NOTIFY SHIFT SUPERVISOR." DATE: AUGUST 27, 2009.
- ID-33-J-28 EBR-II BASEMENT FLOOR. CAMERA FACING NORTH. ARGON RELIEF TANK ON RIGHT, SMOKE ABATEMENT PANEL ON LEFT. BIOLOGICAL SHIELD AND DUCTWORK IS BEHIND THIS EQUIPMENT. DATE: AUGUST 27, 2009.
- ID-33-J-29 EBR-II BASEMENT. CAMERA FACING NORTH. CONTROL PANEL FOR ELECTRICAL CONTROL OF LARGE ROTATING PLUG IN TOP COVER OF PRIMARY TANK. LABEL SAYS, "PLUGGING LOOP CONTROL PANEL." DATE: AUGUST 27, 2009.
- ID-33-J-30 EBR-II BASEMENT. SOUTH FLOOR HATCH. CAMERA FACING UPWARDS TOWARD OPERATING FLOOR TO SHOW BOTTOM OF HATCH. WHEN OPENED, PROVIDED CRANE ACCESS FROM OPERATING FLOOR. DATE: FEBRUARY 22, 2010.
- ID-33-J-31 EBR-II BASEMENT. SOUTH FLOOR HATCH DETAIL. CAMERA FACING HATCH OPENING TO SUB-BASEMENT BELOW. HATCH DEPICTED ID-33-J-30 IS DIRECTLY ABOVE THIS HATCH. DATE: FEBRUARY 22, 2010.
- ID-33-J-32 EBR-II. DETAIL OF NEON SIGN IN TURBINE GENERATOR ROOM INSIDE POWER PLANT, WHICH WAS TURNED ON FOR THIS PHOTOGRAPH. IT SAYS, "ALL OF THE ELECTRICITY NOW IN USE IN THIS FACILITY OF ARGONNE NATIONAL LABORATORY IS ATOMIC POWER." SMALL UNLIT SIGN BELOW IT SAYS, "REACTOR ON." DATE: AUGUST 27, 2009.
- ID-33-J-33 EBR-II. GENERAL VIEW OF INTERIOR OF POWER PLANT BUILDING, TURBINE-GENERATOR FLOOR (DECK). CAMERA FACING NORTH-NORTHWEST. (AXIAL ALIGNMENT OF TURBINE GENERATOR IS DUE NORTH LOOKING TOWARD WINDOW.) GLASS ENCLOSURE TO LEFT BEYOND GENERATOR CONTAINS EXPERIMENT WITH ZEOLITE PROCESS TO ABSORB URANIUM AND PLUTONIUM, AND TRANSFORM IT TO A STABLE WASTE FORM. THE FLOOR SPACE BECAME AVAILABLE FOR SUCH OPPORTUNISTIC ACTIVITY AFTER THE POWER PLANT WAS PERMANENTLY SHUT DOWN IN 1994. DATE: AUGUST 27, 2009.

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- ID-33-J-34 EBR-II OPERATING FLOOR LEVEL, BUT IN CORRIDOR SOUTH OF CONTAINMENT BUILDING. PRIOR TO ENTERING PERSONNEL AIR LOCK, ONE WOULD SEE ON THE LEFT THESE CONTROL PANELS FOR PRIMARY COOLANT PUMPS NO. 1, AND NO. 2. OPERATOR CONTROLLED SPEED OF PRIMARY PUMPS: THE GREATER THE SPEED, THE HIGHER SODIUM FLOW THROUGH THE REACTOR. AN ELECTROMAGNETIC CLUTCH BETWEEN EACH (CONSTANT SPEED) PUMP MOTOR AND (VARIABLE SPEED) GENERATOR SET RECEIVED EXCITATION VOLTAGE, A CONTROL APPLIED AT THE CENTER SPLIT-PANEL IN CENTER OF VIEW. AFTER THE MOTOR-GENERATOR SETS WERE RUNNING AND INITIAL START-UP COMPLETED, CONTROL WAS TRANSFERRED TO AN OPERATOR AT THE CONTROL CONSOLE IN THE EBR-II CONTROL ROOM. FOR MOST REACTOR RUNS, PUMPS WERE ADJUSTED FOR 100-PERCENT FLOW AND LEFT THERE. PHONE AT RIGHT EDGE OF VIEW IS TYPICAL SOUND-POWERED PHONE USED FOR COMMUNICATION AMONG OPERATORS. DATE: AUGUST 27, 2009.
- ID-33-J-35 EBR-II OPERATING FLOOR. CAMERA FACING NORTH FROM JUST OUTSIDE REACTOR ROOM. THIS AIR LOCK DOOR IS THE ENTRANCE TO THE REACTOR ROOM. PEOPLE ENTER THROUGH FIRST DOOR, CLOSE IT BEHIND THEM, THEN OPEN AND PASS THROUGH A SECOND DOOR, CLOSING IT BEHIND THEM. NOTE NAUTICAL-STYLE DOOR CONTROL. DIAMOND-SHAPED SIGN TO LEFT OF DOORWAY INDICATES NATURE OF HAZARD. SIGNS SAY, "FOR ENTRY EACH INDIVIDUAL LOG IN." SEE ID-33-J-36 AND CONSTRUCTION VIEW IN ID-33-J-79. DATE: AUGUST 27, 2009.
- ID-33-J-36 EBR-II OPERATING FLOOR. CAMERA FACING SOUTH FROM INSIDE REACTOR ROOM. MISSILE SHIELD WAS ERECTED BETWEEN AIR LOCK DOOR AND REACTOR. NOTE AURAL AND VISUAL ALARMS, EXIT SIGN, FOLDED EMERGENCY STRETCHER ON RAILING, AIR VENTILATION DUCT. DATE: AUGUST 27, 2009.
- ID-33-J-37 EBR-II OPERATING FLOOR. PENTAGON AREA. CAMERA FACING SOUTH/SOUTHWEST. LEAD WALLS AND LEAD-GLASS SHIELDING WINDOWS PROTECTED PERSONNEL FROM SHEARING MACHINE OPERATIONS, STORAGE-HOLES, AND STORAGE PIT BEYOND. JIB-MOUNTED MANIPULATOR ARM AT ANGLE ABOVE WINDOW OPERATED SHEARS. CABINET LABELED "PPS" (FOR "PLANT PROTECTIVE SYSTEM") IS CONTROL PANEL FOR PRIMARY COOLANT SYSTEM AUXILIARY ELECTROMAGNETIC (EM) PUMP. EM PUMP PROVIDED SMOOTH

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TRANSFER FROM FORCED TO NATURAL CONVECTIVE FLOW FOLLOWING SHUTDOWN OF MAIN PRIMARY PUMPS. THE EM PUMP HAD TO BE OPERABLE AT ALL TIMES; IF NOT, THE REACTOR WAS SHUT DOWN. NOTE SOUND-POWERED TELEPHONE. AT UPPER LEFT OF VIEW, NOTE DARK-COLORED PIPE PENETRATING WALL OF CONTAINMENT BUILDING; THIS IS FOR "REACTOR BUILDING PURGE EXHAUST SYSTEM FAN." IN EVENT OF HEAVY SMOKE OR INERT GAS BUILDUP, THE SYSTEM PROVIDED RAPID EMERGENCY TURNOVER OF ATMOSPHERE. PANEL IN FRONT OF FAN IS MISSILE SHIELD TO PROTECT FAN IN EVENT OF EXPLOSION RESULTING IN FLYING DEBRIS. DATE: FEBRUARY 22, 2010.

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EBR-II OPERATING FLOOR. PENTAGON AREA. CAMERA FACING WEST. VIEWING WINDOW IS OPPOSITE THAT SHOWN IN ID-33-J-37. MANIPULATOR ARM COULD BE MOVED TO SERVE OPERATORS USING THIS WINDOW. CONTROL PANEL AT RIGHT OF VIEW IS INSTRUMENT CONTROL CENTER 1 (ICC-I). IT HAD DISPLAYS OF THERMOCOUPLE READINGS (TWO DARKER PANELS IN CENTER WITH NUMEROUS SELECTOR SWITCHES), AN ALARM PANEL (BLACK-BORDERED PANEL ON TOP), AND CONTROLS FOR PRIMARY TANK COVER GAS SYSTEM. A LARGE CIRCULAR GAUGE NEXT TO ALARM PANEL (SEE HAER PHOTO ID-33-J-37 FOR BETTER VIEW) INDICATED PRESSURE OF PRIMARY TANK COVER GAS. JUST ABOVE ALARM PANEL, THE MEDIUM-GRAY PANEL HAD INDICATORS FOR CONTROL-ROD DRIVE SENSING RODS, JAWS, AND CLUTCHES. THESE ASSURED OPERATORS THAT CONTROL-ROD DRIVES HAD SUCCESSFULLY ENGAGED CONTROL RODS FOLLOWING UNRESTRICTED FUEL HANDLING OPERATIONS. THEY ALSO INDICATED WHEN THE DRIVES WERE FREE OF CONTROL RODS WHEN SETTING UP FOR UNRESTRICTED FUEL HANDLING. DATE: FEBRUARY 22, 2010.

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EBR-II OPERATING FLOOR. CAMERA FACING NORTH. THREE LEAK-TEST DOMES ARE SITUATED ON CONTAINMENT WALL OVER NORTH STAIRWAY TO BASEMENT, FUNCTIONING DURING TESTS OF AIR-TIGHTNESS OF CONTAINMENT BUILDING. DATE: FEBRUARY 22, 2010.

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EBR-II OPERATING FLOOR. CAMERA FACING NORTH. EQUIPMENT CART IS AN AREA RADIATION MONITOR (ONE OF SEVERAL), A PART OF THE "AREA RADIATION MONITORING SYSTEM" (ARMS). THE UNIT DRAWS A CONTINUOUS STREAM OF AIR PAST A SERIES OF DETECTORS AND FILTERS TO CHECK FOR CONTAMINATION

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- OF THE AIR WITHIN REACTOR BUILDING. RADIATION DETECTORS MOUNTED ON THE CART MONITORED FOR ABNORMAL RADIATION LEVELS. IF TRIGGERED, A "TOTALLY OBNOXIOUS BUZZER" -- THE SQUARE VENT BELOW THE "CAUTION" SIGN -- SOUNDED THE ALARM. IN ADDITION, RED ALARM OR YELLOW ALERT LIGHTS AT TOP RIGHT OF CART BEGAN FLASHING. SIGN SAYS, " CAUTION, TWO-WAY RADIO TRANSMISSION WITHIN TEN FEET OF AN ARMS IS PROHIBITED" IN CASE A RADIO BE KEYED TO TRANSMIT AND CAUSE A FALSE ALARM. ARGONNE NATIONAL LABORATORY MANUFACTURED THE UNITS. STAIRWAY AT LEFT LEADS TO EMERGENCY AIR LOCK, DESIGNED TO PROVIDE ESCAPE FOR PERSONNEL IF OTHER EXIT WAS UNAVAILABLE. DATE: AUGUST 27, 2009.
- ID-33-J-41 EBR-II OPERATING FLOOR. CAMERA FACING EAST. DETAIL OF EMERGENCY AIR LOCK (EMERAL). FOR CONTEXTUAL VIEW, SEE HAER PHOTO ID-33-J-39. PERSON USING AIR LOCK WOULD EXIT OUTSIDE. COMPARE WITH HAER PHOTOS ID-33-J-75, -77, AND -105. DATE: AUGUST 27, 2009.
- ID-33-J-42 EBR-II OPERATING FLOOR. CAMERA FACING NORTHEAST. FREIGHT DOOR. ALTHOUGH NOT AN AIR LOCK STRUCTURE, THE DOOR WAS DESIGNED TO BE AIR-TIGHT AND WITHSTAND THE SAME OVER-PRESSURE AS THE REST OF THE CONTAINMENT BUILDING AND ITS OTHER OPENINGS. DATE: AUGUST 27, 2009.
- ID-33-J-43 EBR-II OPERATING FLOOR. CAMERA FACING UPWARDS TOWARD SOUTHWEST AND ROTATING BRIDGE CRANE. CRANE REACHES ACROSS 80-FOOT DIAMETER OF SPACE CREATED BY CONTAINMENT CYLINDER. ABOVE CRANE HAUNCH, CONTAINMENT HEMISPHERE HAS RADIUS OF 40 FEET. CRANE WAS INTEGRAL PART OF FUEL HANDLING PROCEDURES. EQUIPMENT BELOW CRANE AT CENTER OF VIEW IS FUEL-STORAGE BASKET CONTROL. TO ITS RIGHT IS TOP OF SUPERSTRUCTURE CONTAINING CONTROL-ROD MECHANISMS. DATE: AUGUST 27, 2009.
- ID-33-J-44 EBR-II OPERATING FLOOR. CAMERA FACING NORTH. CONTROL TEMPERATURE PROFILE CONDENSER. RECTIFIER FOR ELECTROMAGNETIC PUMP. DATE: AUGUST 27, 2009.
- ID-33-J-45 EBR-II OPERATING FLOOR. CAMERA FACING NORTHWEST. DETAIL OF ELECTRICAL CABLES USED TO POWER THE LARGE ROTATING PLUG IN THE TOP COVER OF THE PRIMARY TANK. EQUIPMENT BELOW IS RECTIFIER FOR ELECTROMAGNETIC PUMP. DATE: FEBRUARY 22, 2010.

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- ID-33-J-46 EBR-II OPERATING FLOOR. CAMERA FACING SOUTH. FUEL HANDLING CONSOLE CONTROLLED THE TRANSFER OF FUEL AND OTHER SUBASSEMBLIES INTO AND OUT OF THE PRIMARY TANK'S STORAGE BASKET. SIGN SAYS, "CAUTION, FLOOR LOAD 500 LBS PER SQUARE FOOT," A REMINDER FOR DEMOLITION CREWS. DATE: AUGUST 27, 2009.
- ID-33-J-47 EBR-II OPERATING FLOOR. CONTEXTUAL VIEW OF SUPERSTRUCTURE -- CONTROL-ROD DRIVE MECHANISMS -- SITUATED ON SMALL ROTATING PLUG IN TOP COVER OF PRIMARY TANK. CAMERA FACING WEST. PRIMARY PUMP NO. TWO. LIGHT-COLORED APPARATUS TO LEFT OF SUPERSTRUCTURE IS STORAGE BASKET DRIVE. AT FLOOR LEVEL IN LOWER RIGHT OF VIEW ARE MOTOR COVER AND BLOWER FOR PRIMARY COOLANT PUMP NO. 1. GAUGE PANEL INDICATES ARGON PRESSURE TO MOTOR ENCLOSURE AND SEALS ON PUMP AND MOTOR SHAFTS. ON CONTAINMENT BUILDING WALL BEHIND BASKET DRIVE IS PART OF THE ELECTRICAL CABLE FOR THE ROTATING PLUG. DATE: AUGUST 27, 2009.
- ID-33-J-48 EBR-II OPERATING FLOOR. DETAIL OF LARGE AND SMALL ROTATING PLUGS, AND REACTOR CONTROL SUPERSTRUCTURE. CAMERA FACING SOUTH-SOUTHEAST. NOTE ELECTRICAL CABLE AT LOWER CENTER EDGE OF VIEW FEEDING INTO SMALL ROTATING PLUG CONTROLS. DATE: FEBRUARY 22, 2010.
- ID-33-J-49 EBR-II OPERATING FLOOR. CAMERA FACING WEST. DETAIL OF CONTROL-ROD MECHANISM ABOVE REACTOR TOP SHOWS VERTICAL AIR PISTONS JUST TO LEFT OF CENTER VIEW. CONTROL LEADS PROJECT FROM THE TOP OF EACH PISTON. DATE: AUGUST 27, 2009.
- ID-33-J-50 EBR-II OPERATING FLOOR. CAMERA FACING EAST. DETAIL OF FUEL STORAGE BASKET DRIVE. DURING FUEL UNLOADING OPERATIONS, SUBASSEMBLIES THAT HAD BEEN PLACED IN THE STORAGE BASKET TO COOL FOR 15 DAYS, WERE REMOVED FROM THE TANK. THE BASKET COULD BE RAISED, LOWERED, AND ROTATED. SMALL AND LARGE ROTATING PLUGS IN LOWER RIGHT CORNER OF VIEW. EDGE OF REACTOR CONTROL ROD DRIVE SUPERSTRUCTURE AT RIGHT EDGE OF VIEW. IN BACKGROUND BELOW FESTOON CABLE IS PENTAGON AREA. SHINY HORIZONTAL BRIGHT-METAL PIPE BEHIND STORAGE BASKET STRUCTURE IS CARBON DIOXIDE PASSIVATION PIPING INSTALLED AFTER THE REACTOR WAS SHUT DOWN AND THE SODIUM PUMPED

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- OUT. FUEL UNLOADING MACHINE AT RIGHT EDGE OF VIEW.  
DATE: AUGUST 27, 2009.
- ID-33-J-51 EBR-II OPERATING FLOOR. CAMERA FACING SOUTHWEST.  
FUEL UNLOADING MACHINE (FUM) CONSOLE CONTROLS  
ARGON GAS COOLING SYSTEM WITHIN FUEL TRANSPORT  
CASKS. GAS COULD EITHER COOL OR HEAT THE CASK  
ENVIRONMENT, AS NEEDED. CENTER OF APPARATUS (IN  
SHADOW OF PLATFORM) IS CASK INTO WHICH GRIPPER  
PULLED SUBASSEMBLIES WITHDRAWN FROM PRIMARY TANK.  
DATE: AUGUST 27, 2009.
- ID-33-J-52 EBR-II OPERATING FLOOR. CAMERA FACING WEST. VIEW  
OF FUM, AN OPPOSITE VIEW FROM ID-33-J-16. SHINY  
HORIZONTAL PIPE IN FRONT OF FUM WITH ELBOW TURN  
INTO PRIMARY TANK IS CARBON DIOXIDE PASSIVATION  
INSTALLED AFTER REACTOR WAS SHUT DOWN AND SODIUM  
PUMPED OUT. FEBRUARY 22, 2010.
- ID-33-J-53 EBR-II OPERATING FLOOR. CAMERA FACING NORTHWEST.  
DETAIL OF FUM'S MOVEABLE CARRIAGE POSITIONED OVER  
PRIMARY TANK FUEL TRANSFER PORT. NOTE WHEELS AND  
RAILS SUPPORTING CARRIAGE. OPENING IN FLOOR AT  
LOWER RIGHT CORNER OF VIEW GAVE LADDER ACCESS BY  
INTO DEPRESSED AREA. PENTAGON VIEWING WINDOW IS IN  
BACKGROUND NEAR CONTAINMENT BUILDING WALL. DATE:  
FEBRUARY 22, 2010.
- ID-33-J-54 EBR-II OPERATING FLOOR. CAMERA FACING NORTH AND  
DOWNWARD TO SHOW TOP OF AN INTERBUILDING COFFIN  
RESTING IN THE COFFIN PIT IN THE DEPRESSED AREA.  
NOTE CARRIAGE STOPS ON RAILS AND LIFTING LUGS ON  
COFFIN. IN TYPICAL OPERATION, THE CRANE LIFTED THE  
COFFIN AND MOVED IT TO THE OPEN HATCH IN THE  
EQUIPMENT AIR LOCK FOR TRANSPORT TO THE FCF. DATE:  
FEBRUARY 22, 2010.
- ID-33-J-55 EBR-II. DETAIL OF AN INTERBUILDING COFFIN. THIS  
COFFIN, RESTING ON A MOVABLE CARRIAGE IN THE  
CORRIDOR BETWEEN THE CONTAINMENT BUILDING AND THE  
FCF, SHOWS THE TWO-PART CONSTRUCTION OF THE COFFIN  
SHIELD. IT CONTAINED ITS OWN ARGON COOLING SYSTEM.  
DATE: FEBRUARY 22, 2010.
- ID-33-J-56 EBR-II OPERATING FLOOR. DETAIL OF EQUIPMENT AIR  
LOCK (EQUAL) HATCH AT EAST SIDE OF CONTAINMENT  
BUILDING. CAMERA FACES EAST. EQUAL PROJECTS  
BENEATH FLOOR TOWARD THE FCF IN DIRECTION OF THE

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- THREE ELECTRICAL CONTROL BOXES JUST BEYOND THE "SAFETY BELT" SIGN. CONTROL BOXES ARE MOUNTED ON CONTAINMENT BUILDING WALL. THEY CONTROL THE EQUAL HATCH AND THE IBC CART THAT RUNS BACK AND FORTH BETWEEN THE CONTAINMENT BUILDING AND THE FCF. OBJECTS HANGING FROM WALL BENEATH "EXIT" SIGN ARE STEEL POSTS THAT SCREWED INTO DECK PLATES TO CREATE WORK BOUNDARIES BY STRINGING MARKED ROPE OR TAPE BETWEEN THEM. ONE SUCH THREADED HOLE IS SEEN JUST LEFT OF THE PAINTED STRIPE ON THE FLOOR AT LOWER LEFT OF VIEW. "EXIT" SIGN POINTS TO THE PERSONNEL AIR LOCK AND ALSO TO EMERAL. ROLLED MATERIAL AT LEFT OF VIEW IS YELLOW PLASTIC USED FOR RADIOLOGICAL CONTROL PURPOSES. DATE: FEBRUARY 22, 2010.
- ID-33-J-57 EBR-II DEPRESSED AREA IN OPERATING FLOOR. THE ARGON COOLING SYSTEM RESIDED HERE BUT WAS COMPLETELY REMOVED FOLLOWING DEFUELING OF THE REACTOR CORE. EQUIPMENT IN VIEW INCLUDES WIRE AND HOSE BUNDLES, AIR FILTERS, STRUCTURAL FLOOR BEAMS. FROM FLOOR TO CEILING, DISTANCE IS ABOUT SIX FEET. SIGN SAYS, "CAUTION HIGH NOISE [AREA] HEARING [PROTECTION REQUIRED]. DATE: FEBRUARY 22, 2010.
- ID-33-J-58 EBR-II. CONTROL ROOM ON MEZZANINE LEVEL OF POWER PLANT. OPERATOR SAT AT CONSOLE IN CENTER OF VIEW, WITH VISUAL ACCESS TO INFORMATION DISPLAYS. DATE: AUGUST 27, 2009.
- ID-33-J-59 EBR-II. CONTROL ROOM ON MEZZANINE LEVEL OF POWER PLANT. CONFERENCE TABLE WITH DISPLAY PANELS BEYOND. DATE: AUGUST 27, 2009.
- ID-33-J-60 EBR-II. DETAIL OF CONTROL PANEL IN CONTROL ROOM. AN OPERATOR PUSHED ONE OF THESE PUSH BUTTONS TO SCRAM THE REACTOR. FOR IMMEDIATE SHUTDOWN, PUSHING THE 1MPB WOULD DROP THE CONTROL RODS OUT OF THE CORE, STOPPING FISSION CHAIN REACTION. DURING UNRESTRICTED FUEL HANDLING, OPERATOR USED 3MPB BUTTON TO RAISE SAFETY RODS IN THE EVENT OF AN UNEXPECTED ANOMALOUS BEHAVIOR, ENSURING THE REACTOR REMAIN SHUT DOWN. DATE: AUGUST 27, 2009.
- ID-33-J-61 EBR-II. HALLWAY IN POWER PLANT. SCALE MODEL OF EBR-II PRIMARY TANK AND REACTOR FOR BENEFIT OF VISITORS. IN THE PRIMARY TANK ARE: STORAGE BASKET NEAR LEFT EDGE OF TANK, REACTOR VESSEL IN CENTER.

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ABOVE TANK: ROTATING PLUGS AND SUPERSTRUCTURE,  
PORTS IN TOP COVER. BIOLOGICAL SHIELD SURROUNDS  
TANK. NOTE DIAGONAL PATH OF COOLING DUCTS IN  
SHIELD. DATE: AUGUST 27, 2009.

HAER photographs ID-33-J-62 through ID-33-J-102 are historical photos. Argonne National Laboratory did not record the names of photographers. "ANL" as prefix for photo numbers designates "Argonne National Laboratory." The collection from which these were selected is located at INL Records Warehouse in Idaho Falls.

ID-33-J-62        EBR-II CONTAINMENT BUILDING EXCAVATION BEGINS. CONTEXTUAL VIEW OF FLAT DESERT TERRAIN. EARTH-MOVING EQUIPMENT INITIATES EXCAVATION THROUGH THIN SNOW COVER. DATE: DECEMBER 19, 1967. PHOTO ANL-ID-103-5013.

ID-33-J-63        EBR-II EXCAVATION PROCEEDED TO CREATE CIRCULAR-SHAPED PIT. INTER-LAYERED LAVA FLOWS AND SEDIMENT LEVELS BENEATH THE SURFACE. CONTINUOUS LAVA FLOW WAS FOUNDATION ROCK FOR CONTAINMENT BUILDING. PHOTOGRAPHER'S CAMERA LOOKED "EAST OF SOUTH" FROM EXCAVATION RAMP AND USED WIDE-ANGLE LENS. DATE: FEBRUARY 27, 1958. PHOTO ANL-ID-103-5032.

ID-33-J-64        EBR-II. CONCRETE PLACEMENT FOR CONTAINMENT BUILDING FOUNDATION. AFTER A FLAT SLAB OF REINFORCED CONCRETE WAS PLACED ABOUT ONE AND A HALF FEET THICK ABOVE THE LAVA ROCK, ADDITIONAL CONCRETE FORMED A SERIES OF CONCENTRIC STEPS TO SURROUND THE FUTURE CONTAINMENT BUILDING. TWO STEPS SHOW HERE. CEMENT TRUCK AT GRADE LEVEL IN UPPER LEFT OF VIEW DUMPS CEMENT DOWN CHUTE TO BUCKETS. CRANE BELOW LOWERS BUCKETS TO PLACEMENT SITE. NOTE ROUNDED HUMP OF LAVA ROCK BELOW TEMPORARY WOODEN STAIRS, A TYPICAL PATTERN FOR LAVA ERUPTIONS ON THE SNAKE RIVER PLAIN. CAMERA FACING SOUTHEAST. DATE: MAY 9, 1958. PHOTO NO. ANL-ID-103-5050.

ID-33-J-65        EBR-II. PREFORMED STEEL PLATES FOR CONTAINMENT BUILDING SHELL. AUTOMATIC WELDING MACHINE IS AT HAND (BEHIND PLATES) TO PROVIDE TEMPORARY WELDS FOR ADJACENT PLATES THAT WOULD FORM THE BOTTOM ELLIPSOIDAL PORTION OF CONTAINMENT BUILDING. CAMERA FACES SOUTHEAST. DATE: MAY 23, 1958. PHOTO NO. ANL-ID-103-5053.

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- ID-33-J-66 EBR-II. DETAIL OF AUTOMATIC WELDING MACHINE AND SUPPORTING CRANE. DATE: MAY 23, 1958. PHOTO NO. ANL-ID-103-5055.
- ID-33-J-67 EBR-II. CONTAINMENT BUILDING CONSTRUCTION. FOUR CONCENTRIC STEPS IN PLACE. FIRST SECTION OF PRE-FORMED STEEL PLATES FOR ELLIPSOID BOTTOM ARE AFFIXED TO A COLUMN, TEMPORARY SUPPORT DURING ELLIPSOID FABRICATION. ACTIVITY AT RIM OF EXCAVATION PIT (UPPER CENTER OF VIEW) PREPARES NEXT SECTIONS FOR CRANE PICKUP. EACH SECTION WEIGHED ABOUT 17 TONS. COMPARE WITH DRAWING, HAER PHOTO ID-33-J-104. CAMERA FACING EAST. DATE: JUNE 12, 1958. PHOTO NO. ANL-ID-103-5062.
- ID-33-J-68 EBR-II. CONTAINMENT BUILDING CONSTRUCTION. SECOND SECTION OF STEEL IS PLACED. TOP SECTIONS DENOTE "BEND" BETWEEN ELLIPSOID AND CYLINDRICAL WALLS OF BUILDING. WORKMEN PROVIDE HUMAN-SCALE REFERENCE. DATE: JUNE 13, 1958. PHOTO NO. ANL-ID-103-5072.
- ID-33-J-69 EBR-II. CONTAINMENT BUILDING CONSTRUCTION. WELDER COMPLETES PERMANENT WELDS. NOTE CONCRETE BELOW ELLIPSOID. THE FOUR FEET BETWEEN CONCRETE AND STEEL PLATES WILL BE FILLED WITH CONCRETE. COMPARE WITH DRAWING R-1. DATE: JULY 23, 1958. PHOTO NO. ANL-ID-103-5078.
- ID-33-J-70 EBR-II. CONTAINMENT BUILDING CONSTRUCTION. CYLINDER SECTIONS UNDERWAY. NOTE SUPPORT COLUMNS AND CROSS-BRACING BELOW ELLIPSOID. CAMERA FACING EAST. DATE: JULY 31, 1958. PHOTO NO. ANL-ID-103-5089.
- ID-33-J-71 EBR-II. CONTAINMENT BUILDING CONSTRUCTION. INTERIOR VIEW TAKEN FROM DERRICK PLATFORM. WELDERS DOUBLE-BUTT WELDED STEEL PLATES. NOTE WORKER ACCESS PROVIDED BY REBAR LADDER ON INTERIOR WALL AT RIGHT OF VIEW. WIDE-ANGLE. DATE: AUGUST 15, 1958. PHOTO NO. ANL-ID-103-5090.
- ID-33-J-72 EBR-II. CONTAINMENT BUILDING CONSTRUCTION. PREPARING TO INSTALL EQUIPMENT AIR LOCK, STEEL PLATES ARE REMOVED. CAMERA FACING WEST. DATE: AUGUST 20, 1958. PHOTO NO. ANL-ID-103-5095.
- ID-33-J-73 EBR-II. CONTAINMENT BUILDING CONSTRUCTION. EQUIPMENT AIR LOCK ARRIVES AT CONSTRUCTION SITE.

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- SHIELDED COFFINS WILL TRAVEL BETWEEN CONTAINMENT BUILDING AND FUEL CYCLE FACILITY (FCF) THROUGH THIS AIR LOCK. NOTE TWO PORTS ON TOP OF AIR LOCK: ONE WILL OPEN INSIDE CONTAINMENT BUILDING; THE OTHER, INSIDE FCF. DATE: AUGUST 20, 1958. PHOTO NO. ANL-ID-103-5096.
- ID-33-J-74 EBR-II. CONTAINMENT BUILDING CONSTRUCTION. AIR LOCK IN PLACE ON EAST SIDE OF CYLINDER. CAMERA FACES NORTHWEST. PHOTOGRAPHER STANDING IN SPACE THAT WILL BE OCCUPIED BY FCF. AIR LOCK WILL BE BELOW GRADE. PORT AT TOP WILL BE THE FCF PORT. SEALS BETWEEN THE AIR LOCK AND THE STEEL WALL WILL BE LEAK TIGHT. DATE: SEPTEMBER 9, 1958. PHOTO NO. ANL-ID-103-5098.
- ID-33-J-75 EBR-II. CONTAINMENT BUILDING CONSTRUCTION. TOP PLATE IN FOREGROUND IS READY FOR PLACEMENT. EMERGENCY AIR LOCK IN PLACE TO LEFT OF EQUIPMENT AIR LOCK. NOTE DERRICK, GUY WIRES, AND TURN TABLE. CAMERA FACING "NORTH OF WEST." DATE: SEPTEMBER 19, 1958. PHOTO NO. ANL-ID-103-5105.
- ID-33-J-76 EBR-II. CONTAINMENT BUILDING CONSTRUCTION. FREIGHT DOOR ON NORTH SIDE OF BUILDING. CAMERA FACING SOUTHWEST. EQUIPMENT AIR LOCK AT LEFT. DATE: SEPTEMBER 19, 1958. PHOTO NO. ANL-ID-103-5108.
- ID-33-J-77 EBR-II. CONTAINMENT BUILDING CONSTRUCTION. INTERIOR VIEW, LEFT TO RIGHT, OF FREIGHT DOOR, EQUIPMENT AIR LOCK, AND EMERGENCY AIR LOCK. COMPARE AIR LOCK WITH HAER PHOTO NO. ID-33-J-56. DATE: SEPTEMBER 19, 1958. PHOTO NO. ANL-ID-103-5109.
- ID-33-J-78 EBR-II. CONTAINMENT BUILDING CONSTRUCTION. WELDING "DOLLAR PLATE" TO BOTTOM OF ELLIPSOID. WELDER HAS ABOUT FOUR FEET OF HEADROOM FOR WORK, ALL OF WHICH WILL BE FILLED WITH CONCRETE. DATE: OCTOBER 24, 1958. PHOTO NO. ANL-ID-103-5136.
- ID-33-J-79 EBR-II. CONTAINMENT BUILDING CONSTRUCTION. SMALL OPENINGS ARE FOR ELECTRICAL CONDUIT BETWEEN REACTOR BUILDING AND POWER PLANT. FOUNDATION COLUMNS FOR CONDUIT TUNNEL TO POWER PLANT AT RIGHT OF VIEW. BACKFILL AROUND ELLIPSOID AND LOWER CYLINDER HAS BEGUN. PERSONNEL AIR LOCK IN UPPER

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- LEFT OF VIEW. DATE: APRIL 21, 1959. PHOTO NO. ANL-ID-103-5268.
- ID-33-J-80      EBR-II. CONTAINMENT BUILDING CONSTRUCTION. EXTERIOR POUR BENEATH ELLIPSOID. DATE: FEBRUARY 25, 1959. PHOTO NO. ANL-ID-103-5185.
- ID-33-J-81      EBR-11. CONTAINMENT BUILDING CONSTRUCTION. INTERIOR CONCRETE LIFT NO. 5. REINFORCEMENT STEEL LINES INSIDE OF STEEL SHELL. INTERIOR AND EXTERIOR LIFTS ATTAINED SAME ELEVATIONS BEFORE NEXT SET OF LIFTS. COMPARE WITH DRAWING R-20. DATE: MARCH 5, 1959. PHOTO NO. ANL-ID-103-5197.
- ID-33-J-82      EBR-II. CONTAINMENT BUILDING CONSTRUCTION. T-1 COLUMNS IN LAYDOWN AREA AT CONSTRUCTION SITE. SIX OF THESE WILL SUPPORT THE PRIMARY TANK. CAMERA FACING NORTHEAST. GRAVER-BUILT WATER TANK IN BACKGROUND AT LEFT. FEBRUARY 5, 1959. PHOTO NO. ANL-ID-103-5177.
- ID-33-J-83      EBR-II. CONTAINMENT BUILDING CONSTRUCTION. SIX T-1 COLUMNS HAVE BEEN TIED TO HORIZONTAL BEAMS AT ELLIPSOID LEVEL (NOT IN VIEW) AND ARE NOW IN PLACE. BIOLOGICAL SHIELD WILL EVENTUALLY SURROUND T-1 COLUMNS. NOTE REINFORCING STEEL (REBAR) GRID IN PLACE AWAITING A LIFT. STRUCTURE IN CENTER VIEW IS PART OF CONSTRUCTION CRANE. DATE: MARCH 25, 1959. PHOTO NO. ANL-ID-103-5206.
- ID-33-J-84      EBR-II. CONTAINMENT BUILDING CONSTRUCTION. REINFORCING STEEL WINDS AROUND THE PRIMARY TANK PIT, AWAITING CONCRETE POURS FOR BIOLOGICAL SHIELD. T-1 COLUMNS WILL PROJECT THREE FEET INTO THE SIX-FOOT-THICK SHIELD. BLAST SHIELD WILL BE INTERIOR TO BIOLOGICAL SHIELD, AND DIAGONAL TUBES ARE FOR VENTILATING DUCTS FOR BLAST SHIELD. COMPARE WITH HAER PHOTO ID-33-J-22. DATE: APRIL 21, 1959. PHOTO NO. ANL-ID-103-5270.
- ID-33-J-85      EBR-II. CONTAINMENT BUILDING CONSTRUCTION. CAMERA FACING NORTHWEST. FROM LEFT TO RIGHT: REBAR GRID LINES CYLINDER WALL IN PREPARATION FOR CONCRETE MISSILE SHIELD. FOUR OF SIXTEEN STORAGE TUBES AT CENTER LEFT OF VIEW. STORAGE PIT BEING FORMED IN LOWER LEFT. CONCRETE SHIELDING WILL SURROUND THEM. SEVERAL VENTILATING DUCTS IN VIEW. T-1 COLUMN TOPS MAKE HANDY CATWALK. CRANE LOWERS CEMENT BUCKET FOR

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LIFT AT APPROXIMATELY TWO FEET BELOW OPERATING FLOOR LEVEL. NOTE REBAR ENCIRCLING BIOLOGICAL SHIELD. DATE: APRIL 23, 1959. PHOTO NO. ANL-ID-103-5272.

- ID-33-J-86 EBR-II. CONTAINMENT BUILDING CONSTRUCTION. SUB-BASEMENT. CAMERA FACING NORTHEAST. TYPICAL VIEW OF CONCRETE EQUIPMENT PEDESTALS LINING FLOOR NEAR ELLIPSOID SHELL. COMPRESSORS INSTALLED IN LEFT FOREGROUND. BIOLOGICAL SHIELD AND BLAST-SHIELD COOLING DUCTS AT RIGHT. COMPARE WITH HAER PHOTO ID-33-J-15, IN WHICH CAMERA FACED ELLIPSOID SHELL. DATE: JUNE 24, 1959. PHOTO NO. ANL-ID-103-5401.
- ID-33-J-87 EBR-II. CONTAINMENT BUILDING CONSTRUCTION, BALCONY IN BASEMENT WILL CONTAIN ELECTRICAL EQUIPMENT. CAMERA FACING EAST/SOUTHEAST. OPENINGS IN WALL AT LEFT ARE FOR ELECTRICAL CONDUIT FROM POWER PLANT. STEEL STAIRWAY TO OPERATING FLOOR IN CENTER VIEW. COMPARE WITH HAER PHOTO ID-33-J-79. BASEMENT BELOW TO RIGHT. BALCONY WILL CONTAIN MOTOR CONTROLS FOR 480 VOLT STARTER CABINET, DISTRIBUTION PANEL, GRIPPER ELEVATION DRIVE CONTROL, RECTIFIER FOR DIRECT-CURRENT ELECTROMAGNETIC PUMP, HOLD-DOWN DRIVE CONTROL, STORAGE BASKET STARTER. DATE: OCTOBER 26, 1959. PHOTO NO. ANL-ID-103-5569.
- ID-33-J-88 EBR-II. CONTAINMENT BUILDING CONSTRUCTION. CAMERA LOOKS INTO PRIMARY TANK CAVITY, WHERE CELOTEX LAYER HAS BEEN INSTALLED AS PART OF BLAST SHIELD. VENTILATING DUCTS ARE ABOVE CELOTEX. DATE: SEPTEMBER 10, 1959. PHOTO NO. ANL-ID-103-5520.
- ID-33-J-89 EBR-II. ASSEMBLING PRIMARY TANK. HALF OF TOP COVER ARRIVES AT EBR-II COMPLEX. SIDE FACING CAMERA IS BOTTOM OF THE COVER. TUBES PROJECTING FROM OTHER SIDE WILL FACE UPWARDS ABOVE PRIMARY TANK. EACH OPENING PROVIDES FOR CONNECTION AND CONTROL OF ONE MOVABLE PART WITHIN PRIMARY TANK. DATE: FEBRUARY 24, 1960. PHOTO NO. ANL-ID-103-5707.
- ID-33-J-90 EBR-II. ASSEMBLING PRIMARY TANK. TWO HALVES OF TOP COVER HAVE BEEN JOINED TOGETHER. WORKERS ARE ALIGNING TOP COVER OVER INNER TANK. CENTER OPENING WILL BE FILLED WITH LARGE AND SMALL ROTATING PLUGS. IN LOWER CENTER OF VIEW, NOTE BRACKET FOR SUSPENDING PRIMARY TANK ON T-1 ROLLERS. TO ITS LEFT IS OBLONG RECTANGULAR OPENING FOR TRANSFER

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ARM. DATE: MARCH 10, 1960. PHOTO NO. ANL-ID-103-5737.

- ID-33-J-91 EBR-11. ASSEMBLING PRIMARY TANK. TOP COVER HAS BEEN WELDED TO BOTH INNER AND GUARD TANK. ASSEMBLY HAS BEEN INSULATED AND COVERED WITH JACKET OF STAINLESS STEEL (TOP SIX TIERS) AND ALUMINUM (BOTTOM TIERS). CRANE WILL SET ASSEMBLY INTO BLAST SHIELD CAVITY. DATE: MARCH 19, 1960. PHOTO NO. ANL-ID-103-5771.
- ID-33-J-92 EBR-II. ASSEMBLING PRIMARY TANK. TOP COVER HAS BEEN SUSPENDED ON T-1 SUPPORT RING AND SPIDER ARMS. NOTE ROLLERS BENEATH ARM SEEN IN LOWER RIGHT OF VIEW. UPPER RIGHT QUADRANT OF VIEW SHOWS DEPRESSED AREA WITH FLOOR GRATES REMOVED. DATE: APRIL 5, 1960. PHOTO NO. ANL-ID-103-5809
- ID-33-J-93 EBR-II. COMPONENTS IN PRIMARY TANK. CAMERA LOOKS ACROSS TOP OF REACTOR VESSEL (CONTROL-ROD TUBES AND INSTRUMENT THIMBLES PROJECT FROM TOP) AND NEUTRON SHIELD TO STORAGE BASKET AT CENTER RIGHT. STRUCTURE OVER STORAGE BASKET IS PART OF THE PLUG ASSEMBLY AND SHAFT THAT WILL ALLOW BASKET TO BE RAISED, LOWERED, AND ROTATED. CATCH BASIN IS AT LOWER RIGHT OF VIEW. DATE: FEBRUARY 1, 1963. PHOTO NO. ANL-ID-103-D5254.
- ID-33-J-94 EBR-II. COMPONENTS IN PRIMARY TANK. STORAGE BASKET AT LEFT OF VIEW WITH TOP OF TUBES. CATCH BASIN IS BENEATH ARC OF TRANSFER ARM (NOT IN VIEW). NOTE SMALL CYLINDER AT FLOOR OF TANK AT LOWER CENTER/LEFT OF VIEW. IN CASE OF GRIPPER FAILURE, A SUBASSEMBLY WOULD LAND HERE IN UPRIGHT POSITION, THE CYLINDER WITH SUBASSEMBLY COULD BE REMOVED FROM THE TANK. DATE: FEBRUARY 1, 1963. PHOTO NO. ANL-ID-103-5343.
- ID-33-J-95 EBR-II. COMPONENTS IN PRIMARY TANK. CAMERA IS INSIDE TANK FACING UPWARDS. TRANSFER ARM PLUG IS AT TOP OF VIEW, NOTE ITS RECTANGULAR SHAPE WITH ROUNDED CORNERS. PHOTOGRAPHER'S LIGHT IS FOCUSED ON SHAFT OF TRANSFER ARM. NOTE COUNTERWEIGHT AT RIGHT EDGE OF VIEW. GRIPPER END OF TRANSFER ARM IS POSITIONED BENEATH FUEL TRANSFER TUBE AND PORT NEAR EDGE OF TANK AT TOP LEFT OF VIEW. DATE: FEBRUARY 1, 1963. PHOTO NO. ANL-ID-103-D5191.

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- ID-33-J-96 EBR-II. COMPONENTS IN PRIMARY TANK. TWO INLET PIPES ENTER OPENING IN REACTOR VESSEL NEAR BOTTOM. LOWER ONE IS FOR LOW-PRESSURE FLOW OF COOLANT TO OUTER BLANKET SUBASSEMBLIES; LARGER ONE IS FOR HIGH PRESSURE FLOW TO CORE AND FIRST TWO RINGS OF BLANKET. NOTE NEUTRON SHIELD CANS SURROUNDING REACTOR VESSEL. SQUARE STRUCTURE AROUND LARGER INLET PIPE IS SUPPORT AND INCLUDES FLOW METER. DATE: FEBRUARY 1, 1963. PHOTO NO. ANL-ID-103-D5255.
- ID-33-J-97 EBR-II. COMPONENTS IN PRIMARY TANK. LOOKING INSIDE REACTOR VESSEL, BLANKET SUBASSEMBLIES ARE IN PLACE. NOTE HEXAGONAL TUBES AND CONE-SHAPED ADAPTERS AT TOP. UNTIL REACTOR HAD GONE CRITICAL FOR THE FIRST TIME, WORKERS COULD LOAD SUBASSEMBLIES BY HAND. DATE: JUNE 1, 1961. PHOTO NO. ANL-ID-103-B5261.
- ID-33-J-98 EBR-II. COMPONENTS FOR PRIMARY TANK. SODIUM SHIPPED BY DUPONT ARRIVED AT SITE IN TEN RAILROAD TANK CARS. CAMERA LOOKING SOUTH. ARRANGED IN TWO ROWS OF FIVE CARS, PIPING IS MANIFOLD WITH PIPE LEADING TO TANK. FILLING THE PRIMARY TANK TOOK PLACE IN JUNE 1962, TAKING ABOUT TEN DAYS. DATE: JUNE 18, 1962. PHOTO NO. ANL-ID-103-C5460.
- ID-33-J-99 EBR-II. CONTAINMENT BUILDING. CONTEXTUAL VIEW OF OPERATING FLOOR. CAMERA FACING NORTHWEST FROM TOP OF A LADDER. REACTOR SUPERSTRUCTURE SITS ON SMALL ROTATING PLUG IN CENTER OF VIEW. STORAGE BASKET DRIVE IS TO ITS LEFT. RAILS FOR FUM ARE POSITIONED AWAITING DELIVERY OF FUM. CANTILEVERED PORTION OF RAILS SITS OVER TRANSFER PORT IN TOP COVER. LEFT END OF RAILS COVERS OPENING TO COFFIN PIT BELOW. FUEL-HANDLING CONTROL CONSOLE IS JUST BEYOND IT. NOTE DARK AND LIGHT PAINT ON METAL FLOOR PLATES. DARKER ONES DEFINE REACTOR TOP-COVER AREA AND DEPRESSED AREA. DATE: JUNE 18, 1961. PHOTO NO. ANL-ID-103-B5308.
- ID-33-J-100 EBR-II. CONTAINMENT BUILDING. CAMERA FACING WEST. FROM LEFT TO RIGHT: REACTOR SUPERSTRUCTURE, FUEL UNLOADING MACHINE CARRIAGE INSTALLED ON RAILS, CONTROL PANEL FOR ARGON GAS COOLING SYSTEM JUST BELOW LADDER; CRANE LOWERS INTERBUILDING COFFIN. DATE: NOT KNOWN. PHOTO NO. ANL-ID-103-H5162.

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ID-33-J-101 EBR-II. AERIAL DETAIL OF COMPLEX, CAMERA LOOKING SOUTH. LEFT TO RIGHT: LABORATORY AND SERVICE BUILDING, SUSPECT STACK, FUEL CYCLE FACILITY (NOTE CORRIDOR CONNECTION TO CONTAINMENT BUILDING), POWER PLANT, CONTAINMENT BUILDING (FREIGHT DOOR IN VIEW), SODIUM BOILER BUILDING, SUBSTATION, COOLING TOWERS. IN FOREGROUND: WATER TANK AND PUMPHOUSE, FUEL OIL STORAGE TANK (WITHIN BERM) AND PUMPHOUSE. DATE: MAY 23, 1962. PHOTO NO. ANL-ID-103-C5423.

ID-33-J-102 EBR-II. AERIAL CONTEXTUAL VIEW OF EBR-II SETTING ON EASTERN SNAKE RIVER PLAIN. CAMERA LOOKING NORTHWEST TO INCLUDE VIEW OF TREAT (REACTOR FACILITY). FROM LEFT TO RIGHT: ELECTRICAL SUBSTATION, POWER PLANT, COOLING TOWERS, YARD LINES, CONTAINMENT BUILDING, SODIUM BOILER BUILDING, FUEL CYCLE FACILITY, SUSPECT STACK. IN FOREGROUND BELOW CONTAINMENT IS SERVICE AND LABORATORY BUILDING. WAREHOUSE BUILDINGS NEAR RIGHT OF VIEW. GUARD STATION IS AT LOWER CENTER OF VIEW. DATE: MAY 23, 1962. PHOTO NO. ANL-ID-103-C5425.

Photographs ID-33-J-103 through ID-33-J-119 are architectural drawings of the EBR-II Containment Building, referred to as "Reactor Plant" by Ferguson drawings. In contrast to NRTS document-control practice, Argonne National Laboratory did not assign classification codes or unique serial numbers to its drawings.

ID-33-J-103 EBR-II AREA PLOT PLAN: REACTOR PLANT, POWER PLANT, SODIUM BOILER BUILDING, FUEL CYCLE FACILITY, LABORATORY AND SERVICE BUILDING, SUBSTATION, COOLING TOWER, FUEL OIL TANK, MATERIALS HANDLING WAREHOUSE, INSPECTION AND TESTING FACILITY, MACHINE SHOP, FIRE STATION, SANITARY WASTE TREATMENT HOUSE, RECEPTION BUILDING, WELLS AND PUMP HOUSES, WATER STORAGE TANK, LAUNDRY SORTING BUILDING, PARKING AREA. SITE BOUNDARIES: BUCHANAN BOULEVARD ON SOUTH; DITCH ON THE WEST; SECURITY FENCING ON SOUTH, WEST, NORTH SIDES. FINISH FLOOR ELEVATIONS NOTED FOR MAIN STRUCTURES. DATE: JANUARY 15, 1959. H.K. FERGUSON COMPANY DRAWING Y-100.

ID-33-J-104 EBR-II REACTOR PLANT BUILDING SHELL. CROSS-SECTION THROUGH CONTAINMENT BUILDING. (TOTAL HEIGHT: 138 FEET, 9 INCHES.) WELD AND ANCHOR BOLT DETAILS.

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- SHELL-ERECTION BRACING COLUMNS. DATE: SEPTEMBER 1957. H.K. FERGUSON COMPANY DRAWING R-1.
- ID-33-J-105 EBR-II REACTOR PLANT. SECTION AA THROUGH CONTAINMENT VESSEL: PRIMARY REACTOR TANK, SUB-BASEMENT, BASEMENT, OPERATING FLOOR, FREIGHT DOOR, EMERGENCY AIR LOCK, PLATFORMS, CRANE HAUNCH, BRIDGE CRANE RAIL, CONCRETE STEP FOUNDATION, LAVA ROCK BASE, FLOOR LEVEL AND OTHER ELEVATIONS. DESIGN LOADS FOR FLOORS, STEEL FLOOR PLATE, HATCH COVERS, PLATFORMS, ARGON PURIFICATION AND SODIUM SAMPLING CELL FLOORS, AND STAIRS. GENERAL NOTES ON CONCRETE SPECIFICATIONS. DATE: MAY 21, 1958 H.K. FERGUSON DRAWING R-2.
- ID-33-J-106 EBR-II REACTOR PLANT BUILDING SHELL OPENINGS AND DETAILS. "DEVELOPED" CYLINDER UNROLLS SHELL TO IDENTIFY AND LOCATE OPENINGS IN SHELL ABOVE AND BELOW OPERATING FLOOR LEVEL. DATE: MAY 21, 1958. H.K. FERGUSON DRAWING R-3.
- ID-33-J-107 EBR-II REACTOR PLANT BLAST SHIELD PLAN, SECTION, AND DETAILS. COOLING DUCTS. CELOTEX. AERATED CONCRETE, VERMICULITE CONCRETE, ASBESTOS INSULATION. ALUMINUM FOIL COVER. DATE: MAY 21, 1958. H.K. FERGUSON DRAWING R-12.
- ID-33-J-108 EBR-II REACTOR PLANT OPERATING FLOOR PLAN AND SECTIONS. SECTIONS THROUGH SUB-BASEMENT AND BASEMENT. HATCHES, STORAGE PIT AND STORAGE TUBES, STAIRWAYS, AIR LOCKS. MISSILE SHIELD FOR PERSONNEL AIR LOCK. BATTERY PIT. DATE: MAY 21, 1958. H.K. FERGUSON DRAWING R-17.
- ID-33-J-109 EBR-II REACTOR PLANT BASEMENT PLAN AND SECTIONS. SODIUM PURIFICATION AND SAMPLING CELLS, MAZE, TEST INSTRUMENT ROOM. HATCH AND BEAM LOCATIONS. DATE: MAY 21, 1958. H.K. FERGUSON DRAWING R-18.
- ID-33-J-110 EBR-II REACTOR PLANT SUB-BASEMENT PLAN AND DETAILS. BASEMENT SUPPORT COLUMNS. T-1 BEAMS. STAIRWAYS. EQUIPMENT FOUNDATIONS. DATE: MAY 22, 1958. H.K. FERGUSON DRAWING R-19.
- ID-33-J-111 EBR-II REACTOR PLANT CONCRETE PLACEMENT BELOW ELEVATION 97 FEET/6 INCHES. NUMBERED CONCRETE LIFTS AT INTERIOR AND EXTERIOR OF ELLIPSOID.

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- "GREEK THEATRE" CONCRETE STEPS. DATE: MAY 21, 1958. H.K. FERGUSON DRAWING R-20.
- ID-33-J-112 EBR-II REACTOR PLANT CONCRETE REINFORCEMENT BELOW ELEVATION 97 FEET/6 INCHES. STEEL BEAM CHANNELS FOR T-1 STRUCTURE. BEAM SUPPORT FOR PRIMARY TANK. DATE: MAY 21, 1958. H.K. FERGUSON DRAWING R-21.
- ID-33-J-113 EBR-II REACTOR PLANT STRUCTURE BELOW ELEVATION 129. SECTION A DESIGNATES LIFT SEQUENCE FOR POURS INSIDE AND OUTSIDE STEEL SHELL. DATE: MAY 21, 1958. H.K. FERGUSON DRAWING R-22.
- ID-33-J-114 EBR-II REACTOR PLANT PLAN AT ELEVATION 117. EQUIPMENT AIR LOCK SHIELDING AND SUPPORT. ELECTRICAL BALCONY. VIEWING WINDOWS. OTHER DETAILS. DATE: MAY 21, 1958. H.K. FERGUSON DRAWING R-26.
- ID-33-J-115 EBR-II REACTOR PLANT EQUIPMENT LAYOUT ON OPERATING FLOOR. DATE: JUNE 10, 1958. H.K. FERGUSON DRAWING R-600.
- ID-33-J-116 EBR-II REACTOR PLANT EQUIPMENT LAYOUT FOR BASEMENT. DATE: JUNE 10, 1958. H.K. FERGUSON DRAWING R-601.
- ID-33-J-117 EBR-II REACTOR PLANT EQUIPMENT LAYOUT FOR SUB-BASEMENT. DATE: JUNE 10, 1958. H.K. FERGUSON DRAWING R-602.
- ID-33-J-118 EBR-II REACTOR PLANT EQUIPMENT LAYOUT SECTION AA THROUGH CONTAINMENT VESSEL SHOWING PRIMARY TANK, BLAST SHIELD, EQUIPMENT AIR LOCK, SUB-BASEMENT AND BASEMENT ROOMS, SHIELD COOLING DUCTS, MISSING SHIELDS, PLATFORMS, ROTATING BRIDGE CRANE, EMERGENCY SHUTDOWN COOLER. DATE: JUNE 10, 1958. H.K. FERGUSON DRAWING R-603.
- ID-33-J-119 EBR-II REACTOR BUILDING EQUIPMENT LAYOUT SECTIONS BB AND OTHERS. DATE: JUNE 10, 1958. H.K. FERGUSON DRAWING R-604.

Notes:

1. The historical photographs selected for this report are from Idaho National Laboratory's Photograph Archive. Negatives are

stored at the INL Records Warehouse at Idaho Falls, Idaho.

2. The INL Photograph Archive acquired Argonne National Laboratory photographs of the EBR-II complex in 2005. They document construction progress, events, equipment and procedures, and aerial surveys of the site. Most of these resources can be made available to the public for examination and reproduction.

3. The original engineering drawings for EBR-II were no longer available when this HAER report was prepared. The photographic copies herein were made from microfilm aperture cards. Thus, the negative images are black-on-white; the prints, white-on-black. A reader may find it more convenient to examine drawings by looking at the negatives instead of the prints.

4. Argonne National Laboratory, headquartered in Illinois, indexed EBR-II photographs with the prefix ANL-ID-103. Photographs related to the Containment Building began with a four-digit number beginning with the numeral five. The first image was numbered: ANL-ID-103-5000. After exhausting the numbers 5000 to 5999, the series continued with A5000 to A5999, and so on. Upon consuming the entire alphabet, the system continued with a series of double letters, as in AA5000 to AA5999. Each print (usually 8x10) was labeled with its number and stored in three-ring binders. Negatives were numbered and filed separately in drawers.

Photo assignments were logged in small notebooks identifying the authorizing staff person. This information was then transcribed to a master log, which was typed with the date and photographers' captions (but not photographers' names). At the INL Records Warehouse, negatives and prints were removed from the three-ring binders and placed in storage boxes. Any given box may contain prints and/or negatives, but usually not the matching set. To obtain photo dates and photographers' captions, it is essential to consult the typed master log.

5. Argonne numbered EBR-II buildings historically with the prefix ANLW, for "Argonne National Laboratory-West." The Containment Building was ANLW-767. This prefix was removed circa 2005 when INL renamed the area as Materials and Fuels Complex. In contrast to buildings under the jurisdiction of the Idaho National Laboratory, which historically numbered its buildings in a 600 sequence, Argonne numbered buildings in a 700 sequence. For simplicity, this report supplies only the building numbers.