



Powell Apparatus Service Division

Maintenance Guideline - MG2005

PCR General Maintenance Inspection Guide

The Powell Power Control Room (PCR[®]) is a customized electrical enclosure, designed to house and protect various types of electrical control equipment. Most PCR[®]s are constructed of formed interlocking, self-framing galvanized steel panels, and are intended to provide long life with a minimum of maintenance. However, a regular maintenance inspection schedule should be established to optimize the service and reliability of the PCR[®] and the equipment inside. The level of complexity varies greatly and this guideline does not attempt to address all of the variables which may be engineered into a specific PCR[®].

Actual inspection intervals will depend upon the individual application conditions such as operating environment and location. Atmospheric conditions such as extremes of dust, moisture, or corrosive gases typically require inspection and maintenance at more frequent intervals. Conversely, very clean and dry conditions would justify longer times between inspection and maintenance operations. With experience, each user can set an inspection maintenance schedule that is best suited for their situation.

A permanent record of maintenance inspections is important for long term equipment performance. This record should begin at installation by noting minor exceptions. This record will be a valuable reference for subsequent maintenance inspections. It is also recommended that the record include reports of tests performed and any repairs or adjustments that are made.

The PCR[®] may contain several different types of equipment, each with its own instruction manual. These instruction manuals should be reviewed in conjunction with its application within the PCR[®] before performing any maintenance on the specific equipment.

PCR EXTERIOR WALLS & ROOF

Visually inspect the walls and roof of painted PCR[®]'s. Severe physical and environmental damage to the paint system may penetrate the paint and galvanized surfaces. The roof is especially susceptible if installation personnel did not take care to prevent damage from drill shavings, handling, rigging and transportation. Areas where rust is visible should be cleaned, prepared and painted as soon as possible to limit damage.

Visually check the PCR[®] exterior stairs, landings, rain gutters, etc. for loose or damaged parts and components. Tighten or replace loose or missing hardware. Damaged components should be replaced or repaired.

WEATHER-PROOFING SEALANT

Many of the seams on the exterior walls, along with any other exterior wall penetrations such as bus ducts and bulkheads, use caulk to seal the PCR[®]. Signs of leakage on the interior or the PCR[®] should be investigated to determine the point of entry. Other areas such as cable entries below the PCR[®] should also be checked periodically for weatherproof integrity. A silicon based weather sealant is recommended for all weather seal repairs.



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PCR STRUCTURAL FRAME & BASE

The structural base and frame of the PCR[®] is maintenance free. Visually inspect the accessible areas for excessive rust. Minor surface rust will not reduce the integrity of the structure, but exterior surfaces can be painted for cosmetic reasons.

EXTERIOR EQUIPMENT REAR ACCESS DOORS

The PCR[®] may be supplied with equipment rear access doors. The latches, handles, hinges and weatherproof gasket around the door should be checked for condition and proper operation. If vent filters are supplied they should be checked, cleaned or replaced as needed.

HVAC / PRESSURIZATION SYSTEMS

PCR[®]s are usually supplied with a self-contained HVAC/ Pressurization system that is designed to maintain a uniform temperature inside the PCR[®]. The integrity of the weatherproof seal between the HVAC unit and the PCR[®] should be checked. If the PCR[®] is equipped with a pressurization unit, the filter system on the exterior of the unit should be serviced. Pressurization systems require the PCR[®] to be sealed to reduce air loss. Penetrations made for cable entry by the installing contractor must be sealed, door closers properly adjusted and weather stripping maintained, to keep the system working properly.

The HVAC system is normally equipped with filters. These filters should be changed on a regular basis. If the PCR[®] is equipped with a pressurization unit, the filter system on the interior of the unit should be routinely inspected. Refer to specific HVAC/Pressurization manufacturer instruction manuals to determine the proper maintenance schedule.

EXTERIOR ELECTRICAL

The PCR[®] is supplied with a minimum of two ground pads to connect the PCR[®] to the external ground grid. These ground connections should be checked during the maintenance inspection. If the PCR[®] is equipped with photocells, lights, strobes, horns, or GFI receptacles, they should also be checked to ensure they are in proper working condition.

MISCELLANEOUS

If the PCR[®] is equipped with arc resistant discharge panels (used with arc resistant switchgear), verify that the panels are not blocked on the exterior of the PCR[®]. **(WARNING)** Obstruction of the panels will prevent proper hot gas discharge when the panels are required to operate and may result in equipment damage and/or serious personal injury.



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INTERIOR GROUNDING

The equipment within the PCR[®] is grounded either directly to the frame or by a copper ground bus loop installed near the ceiling. In either case, it is recommended that these ground connections be checked during a routine maintenance schedule.

INTERIOR ELECTRICAL

The PCR[®] may be equipped with a combination of interior lighting, emergency lighting; exit signs, strobes, horns, and GFI receptacles. These facilities should be checked to ensure they are in proper working condition. Additional optional items to inspect include exhaust fans, battery room fans, and smoke or gas detectors. If the PCR[®] contains a fire alarm/suppression system, refer to the specific manufacturer's recommended maintenance schedule and instructions.

INTERIOR MISCELLANEOUS SAFETY EQUIPMENT

The PCR[®] may also be equipped with an eye wash station near the batteries. It should be inspected per ANSI Z358.1 for accessibility and fluid content. Confirm the eye wash solution is within its proper use date. If the PCR[®] is equipped with fire extinguishers, check the gauge on the extinguishers to confirm they are within operating conditions. Personnel or equipment doors equipped with panic bars should have the panic bars operated to ensure the door is in proper working condition.

Contact Powell Apparatus Service Division for additional information. Current versions of Powell service guidelines can be accessed online at www.powellservice.com. PASD also offers maintenance programs using experienced field service personnel. PASD can perform the inspection and maintain the records.