27. PVC Conduit Repair Procedure

  a. Remove concrete to expose an area 1-1/2" minimum around the damaged area.
      Chamfer the inside edge of the hole to clean up and eliminate burrs and
      create a smooth edge inside the conduit. Clean up the outside of the
      conduit around the damaged area and apply a section of PVC coupling
      sufficient to completely cover the area and cement in place with PVC
      cement. Repair concrete per Section 17 of civil Specification C-231.
      This will maintain the integrity of the conduit and the concrete.

  b. When the length of the damaged area is greater than that of a coupling,
      an alternative method of repair may be used as follows:

      1) Cut a piece of PVC (same diameter as damaged PVC) 3 inches longer
          than the damaged area.

      2) Cut a vertical section out of the PVC which will allow it to
          overlap the damaged section by at least 1/2 inch on each side of
          the damaged section.

      3) Form the PVC by heating and forming it on a piece of GRS of the
          same diameter.

      4) Perform Step A using the formed PVC in place of a coupling.

28. Conduit Clearance and 2 Over 1 Criteria

    The adequacy of seismic supports of non-1E raceway will be done by analysis
    and/or engineering walkdown late in the job. No Q.C. inspection is required.

  a. Conduits of different channels, running parallel or perpendicular to each
      other, (shall) maintain a minimum separation of one (1) inch between the
      conduits, conduit fittings or condulet bodies.

  b. Seismic Class 1E conduit installations shall not be routed under non-
      Category I components (tray, conduit, piping, valves, or valve operators,
      ductwork, pumps, or motors, tanks, instrumentation, lighting fixtures,
      etc.) When this is not possible, and analysis cannot verify that failure
      is acceptable, the non-Category I component must be seismically supported.

  c. Non-Class 1E conduits shall not be routed over Seismic Category I components
      (tray, conduit, piping, valves or valve operators, ductwork, pumps or motors,
      tanks, instrumentation and tubing, lighting fixtures, etc.). When this is
      not possible, and analysis cannot verify that failure is acceptable, the
      non-Class 1E conduits must be seismically supported.

  d. At crossovers, non-Class 1E conduits shall have a seismic support on each
      side of the crossover spaced in accordance with the Class 1E support
      criteria. Additional seismic supports need not be provided for the
      remaining conduit length.

  e. Non-Class 1E conduits running parallel and at an elevation above the
      Seismic Category I installation shall be seismically supported in accor-
      dance with the support criteria for Class 1E when the horizontal distance
      is less than 12 inches and analysis cannot verify that failure is acceptable.

No.	DATE	REVISIONS	BY	CHK'D
	8-5-82	INCORP DCN #153	GBB	
			RLH	DBH
	1-24-77	ISSUED FOR CONSTRUCTION	RLH	TLS

SCALE	DESIGNED			
ORIGIN		MIDLAND PLANT UNITS 1 & 2	JOB No. 7220	
		CONSUMERS POWER COMPANY	DRAWING No.	REV.
		CONDUIT AND TRAY	E-42(Q) SH. 11B	10
		NOTES, SYMBOLS AND DETAILS		

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