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ComEd

U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, DC 20555

Attention: Document Control Desk

Subject: List of Items From NRC Visit at LaSalle Regarding the Request for Additional Information For Darmatt KM-1 Seismic Qualification

References: (1) May 31, 1995, R. Querio Letter to US NRC
(2) August 16, 1995 Meeting between Commonwealth Edison Company and the Nuclear Regulatory Commission

During the reference meeting between the Nuclear Regulatory Commission (NRC) and the Commonwealth Edison Company (ComEd) at LaSalle County Station, the following questions were asked and/or information requested by the NRC to assist in their review of reference letter. In response to this request, ComEd is providing the following information:

1) Provide the basis for the weight of Darmatt KM-1 One Hour System for LaSalle 30" X 6" Cable Tray.

Answer: In reference (1), ComEd provided the NRC staff with the weight of the Darmatt KM-1 material for LaSalle Co. as being 26lb/ft, as installed on a 30 x 6 inch cable tray. This value is the weight for the manufacturing of the Darmatt KM-1 board and does not include the tolerances for the as-manufactured Darmatt board product, plus the weight of the other components of the Darmatt KM-1 One Hour System.

The as-manufactured weight of the Darmatt KM-1 One Hour System is 34.9 ± 4.5% pounds per linear foot for the LaSalle 30 x 6 inch cable tray, which takes into account all of the system's components that have been installed at LaSalle Co.(i.e., fiber board spacers installed on the tray sides, ceramic paper, etc.). This weight value is based on the weights for each component as shown below: (Note that all the units are not the same.)

J-Hooks	=	0.02 lbs/set
18 Gauge Inconel Wire	=	0.007 lbs/ft
Gasket	=	0.34 lbs/sq.ft.
Glass Cloth	=	0.16 lbs/sq.ft.
Ceramic Paper	=	10 lbs/cu.ft.
Ceramic Fiberboard	=	13 lbs/cu.ft.
Darmatt KM-1 Board	=	2.66 lbs/sq.ft. ± 5.0%

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The tolerance of the system weight is dependent on the tolerance of the Darmatt KM-1 Board. Accordingly, using the accumulative component weights, the maximum weight for the One Hour System as installed to a 30 x 6 inch cable tray equates to 36.5 pounds per linear foot [34.9 lbs/ft + (.045) 34.9 lbs/ft = 36.5 lbs/ft].

2) Explain how the Darmatt KM-1 Board is fabricated and how much variance exists in the size during the manufacturing process.

Answer: The manufacturing of the Darmatt KM-1 board is described in the **proprietary** Darchem Design Department Report CMP 001, "Darmatt KM1 - Base Material Product For Nominal 16mm Thick Board". The report describes the ingredients for formulation of the board, including allowable tolerances. In the manufacturing of the board, calibrated scales are used to measure the ingredients, which are poured into a tray to form the board. After drying, the moisture content of the board is measured to determine that the board is ready for the finishing process. In the finishing process, the board is rolled to the specified thickness of 16mm $\pm$ 3mm. The finished board is considered to be acceptable if the board thickness is within $\pm$ 3mm; the surface density is 13kg/m^2 $\pm$ 15%, and surface finish shows no cracks greater than 150mm in length and 1mm in width.

3) Explain how much deflection is expected and how the analysis demonstrates that it is acceptable.

Answer: The Darmatt KM-1 One Hour System weight of 36.5 pounds per linear foot of tray was used to revise the Seismic II/I evaluation discussed in reference (1). As stated in reference (1), the maximum drop height of the Darmatt KM-1 material has been determined to be no more than 62 inches for the cable tray cover, 48 inches for the bus duct, 50 inches for the electrical conduit and 57 inches for the HVAC duct located below the Darmatt KM-installations. This maximum height was again used in the revised impact calculations for each case. Accordingly, utilizing the 36.5 lb./ft. value, the weight of a representative Darmatt KM-1 piece falling is 15 lbs. Calculating the ductility ratio for each case has determined a worse case ductility ratio value of 3.1 for the cable tray cover, which is still significantly less than the value of 10 allowed in Appendix A of SRP Section 3.5.3, "Permissible Ductility Ratio For Overall Damage Protection." In using the new weight value, the results indicated that these components will be able to withstand the impact of dropped Darmatt KM-1 pieces during a seismic event.

The conclusions of the evaluation remain the same. The amount of deflection expected based on the impact of the Darmatt KM-1 on the cable tray cover is 1.64 inches.

4) Provide a description of the Diesel Generator Corridor CO2 System

Answer: The CO2 system piping running through the DG corridor is normally not pressurized. This includes the main discharge piping, up to and including the area selector valves, and the inlet and outlet pilot lines leading to the electro-manual pilot valves (EMPC), also located in the corridor.

Pressurization of these lines only occurs as a result of automatic actuation of the system, by way of a detection signal or pushbutton operation, or by manual operation of the selector and master EMPCs. The master EMPC opens the master valve, which is located above the CO2 storage tank. The master EMPC is located in the Turbine Building near the CO2 storage tank. Opening of the master valve results in the entire CO2 discharge piping, up to the selector valve and including the inlet pilot lines, being pressurized.

During a seismic event, a postulated sheet of Darmatt falling on and breaking either the discharge or pilot piping would not cause a CO2 discharge into the DG corridor. The piping would simply break without further incident. Although breaking any of these lines would result in the CO2 system not being available to suppress a fire, a seismic and fire scenario was not postulated.

If there are any questions with respect to this issue, please contact this office.

Sincerely,

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