

## PMTurkeyCOLNPEm Resource

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**From:** Comar, Manny  
**Sent:** Wednesday, September 02, 2015 3:59 PM  
**To:** Steve Franzone  
**Cc:** TurkeyCOL Resource  
**Subject:** FW: Auto Missile Issue at TP

FYI

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**From:** Chuang, Tze-Jer  
**Sent:** Tuesday, September 01, 2015 3:59 PM  
**To:** Vera, Marieliz  
**Cc:** Thomas, Vaughn; Patel, Pravin; Comar, Manny  
**Subject:** Auto Missile Issue at TP

ALL:

Our phone discussion with the TP applicant focused on finite element approach. The shear demands are more accurate.

So I add the finite element results from Table 6 for the edge case in the table below (see 4<sup>th</sup> column).

As can be seen, the shear demands are even more than obtained from hand calculations, which were computed in the previous SA report.

So the issue becomes the capacity as defined by ACI code. For example, for 1W, Table 6 claims 62.16 klf, whereas Table 3 shows 34.19 klf.

They need to provide justification on why for 1W , for example, the capacity is 62.16 klf, not 34.19 klf.

Note that the DCD has determined that 1W, 4W and 5W behave as on-way beam response (whereas 2W and 3W two-way response).

The calculated results are tabulated in the following Table 3 as amended.

**Table 3 (Amended) – One-Way Beam Reactions in Shear**

Wall ID	Dynamic Load Factor (DLF)	Beam Shear $V_u$ (klf)	Finite Element $V_u$ (klf)	Allowable Shear <sup>(2)</sup> $\phi V_c$ (klf)
1W	1.86 <sup>(1)</sup>	39.16	46.7	34.19 <sup>(1)</sup>
2W	1.35	36.52	44.47	27.66
3W	1.20	33.26	42.8	28.61
4W	1.56	40.64	51.42	28.63
5W	1.25	27.86	41.66	32.60

Note (1): The DLF for 1W cannot be 0.97—recalculated to 1.86, based on DCD results; the allowable stress can be increased 1.1 times from 31.08 klf to 34.19 klf

(2): One-Way Beam Response Allowable Shear Stress:  $\phi V_c = 112.76 \times 12 \times d$  (in inch) ÷ 1000 (in klf)

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