

REFINERY AND PILOT CHEMICAL NEP CITATIONS

COMPARISON OF REFINERY AND PILOT CHEMICAL NEP'S TO PRIOR PSM INSPECTIONS

Type of PSM Inspection Program	Citations per Inspection	Penalty (\$) per Inspection
Refinery NEP	11.2	76,800
Pilot Chemical NEP	8.4	31,600
PQV and other non-NEP inspections (before 2007)	2.3	2,950

NEP inspections have more violations and higher penalties than prior PSM OR PQV inspections:

REFINERY NEP FREQUENTLY CITED PSM ELEMENTS

Element	Description	Number	Percent
j	Mechanical Integrity	198	19.5
d	Process Safety Information	177	17.4
f	Operating Procedures	174	17.1
e	Process Hazard Analysis	168	16.5
l	Management of Change	92	9.0
m	Incident Investigation	68	6.7
h	Contractors	44	4.3
o	Compliance Audits	41	4.0
g	Training	29	2.9
n	Emergency Planning and Response	14	1.4
c	Employee Participation	12	1.2

REFINERY NEP FREQUENTLY CITED PSM SUB-ELEMENTS

Sub-element	Description	Number
119(d)(3)(ii)	Compliance with RAGAGEP	71
119(j)(5)	Correction of deficiencies	63
119(e)(5)	PHA findings not addressed	52
119(l)(1)	MOC not established / implemented	39
119(d)(3)(i)(B)	P&IDs missing / incorrect	37
119(j)(2)	No written MI procedures	38
119(e)(3)(v)	PHA facility siting	29
119(f)(4)	Safe work practices not established	29
119(j)(4)(iii)	I&T frequency	25
119(j)(4)(i)	Inspections and tests not performed	24
119(d)(3)(i)(D)	Relief system design and design basis	24
119(f)(1)(i)(D)	Emergency shutdown in operating procedures	24

REFINERY NEP TOP TWELVE 1910 STANDARDS VIOLATED

Designation	Description	Number
1910.119	Process Safety Management	891
1910.147	Lockout / Tagout	55
1910.120	Hazardous Waste and Emergency Response	47
1910.134	Respiratory Protection	36
1904.029	Forms (Record Keeping)	31
1910.023	Guarding Openings	31
1910.305	Electrical	22
1910.1200	HazCom	19
1910.146	Permit Required Confined Space	19
1910.151	Medical Services and First Aid	19
1910.212	Machine Guarding	19

PILOT CHEMICAL NEP CITATIONS BY PSM ELEMENT

Element	Description	Percent
j	Mechanical Integrity	23.2
d	Process Safety Information	20.9
e	Process Hazard Analysis	15.8
f	Operating Procedures	14.0
l	Management of Change	5.5
o	Compliance Audits	4.5
g	Training	3.8
h	Contractors	3.4
c	Employee Participation	2.8
m	Incident Investigation	2.6
n	Emergency Planning and Response	1.8
i	Pre-startup Review	1.1
k	Hot Work	0.6

PILOT CHEMICAL NEP CITATIONS BY PSM SUB-ELEMENT

Sub-element	Description	Percent
119(d)(3)(ii)	PSI RAGAGEP	7.0
119(j)(2)	MI written procedures	6.7
119(j)(5)	MI equipment deficiencies	3.7
119(l)(1)	Management of Change development and implementation	3.7
119(j)(4)(i)	MI I&T performance	3.6
119(e)(5)	PHA findings and recommendations	3.5
119(d)(3)(i)(B)	PSI P&IDs	3.4
119(o)(1)	Compliance audits performed / certified	3.0
119(j)(4)(iii)	MI I&T frequency	2.7
119(e)(3)(i)	PHA hazards of the process	2.5
119(e)(1)	PHA performance	2.2
119(f)(1)	Operating procedures developed and implementation	2.2
119(f)(3)	Operating procedures annually certified	2.2
119(j)(4)(ii)	MI I&T follow RAGAGEP	2.0