NEW MEXICO
ENVIRONMENT DEPARTMENT

DOE Oversight Bureau

Post Office Box 5400 MS 1396
Albuquerque, NM 87185-5400
Phone (505) 845-5823 Fax (505) 845-5853
www.nmenv.state.nm.us

BILL RICHARDSON
Governor
DIANE DENISH
Lieutenant Governor

RON CURRY
Secretary
JON GOLDSTEIN
Deputy Secretary

March 17, 2008

Gayle Dye, Ph.D., POC
U.S. Department of Energy
P.O. Box 5400
Albuquerque, New Mexico 87185-5400

RE: NMED/DOE-OB Data submittal for Direct Penetrating Radiation Results near Sandia National Laboratory, Fourth Quarter Calendar Year 2007

Dear Dr. Dye:

The DOE Oversight Bureau, Sandia Oversight Section (DOE-OB/SOS) of the New Mexico Environment Department obtained direct penetrating radiation (DPR) data using radiation monitoring electrets at similar locations as Sandia National Laboratory, New Mexico (SNL/NM) thermoluminescent dosimeters (TLDs). The accompanying data report shows the direct penetrating radiation at various locations in and around SNL/NM. The Lovelace Respiratory Research Institute (LRRI) station is the only one not co-located with SNL/NM.

Graph-1 shows DOE-OB/SOS third calendar quarter DPR results by station. DPR results at the Four Hills station (E8009) had the highest quarterly reading of 40.24 mRad. However, the overall DPR average from our on-site locations was closely related to the overall average taken from off-site locations. Graph-2 shows DOE-OB/SOS results with standard deviation information. Graph-3 compares the DOE-OB-SOS DPR results to SNL/NM DPR results for the last two calendar quarters. Although our results tend to be somewhat higher, both systems are comparable as indicated in Graph-3.

The monitoring results will be provided to DOE for review and comment prior to their release as final to other State of New Mexico and federal agencies, the Pueblos, our website and interested members of the public. If you have any questions, or if you would like copies of the complete data set, please contact Chris Armijo at (505)845-5824 or contact me at (505)845-5933.

Sincerely,

Barry S. Birch
Program Manager
Sandia Oversight Section

BSB:ca

Enclosure: (1) Table-1 Fourth Quarter DPR Results as Measaured by Electrets
(2) Graph-1 Fourth Calendar Quarter DPR Results
(3) Graph-2 Fourth Calendar Quarter DPR Results with Standard Deviation
(3) Graph-2 Recent Calendar Quarters with SNL/NM DPR Results

cc: Karen Agogino, DOE-AL, MS 0184
Gus Potter, SNL. Org 7578, MS-0651
Thomas Skibitski, Chief, DOE-Oversight Bureau

Calendar Q42007 **Direct Penetrating Radiation as Measaured by Electrets**

New Mexico Environment Department DOE Oversight Bureau, SNL Oversight Section

Technical Area V — On-Site

SNL TLD# E8004

SX 3991	10/2/2007 9:35	1/9/2008 11:20	# of Days:	99.07	Voltage Drop:	70
Calibration Factor:	Dose (µR):	Dose Rate (µR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.91	36769.51	15.46	36.77		**33.87**	
SX 3993	10/2/2007 9:35	1/9/2008 11:20	# of Days:	99.07	Voltage Drop:	75
Calibration Factor:	Dose (µR):	Dose Rate (µR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.90	39421.41	16.58	39.42		**36.31**	
SX 3994	10/2/2007 9:35	1/9/2008 11:20	# of Days:	98.95	Voltage Drop:	74
Calibration Factor:	Dose (µR):	Dose Rate (µR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.89	39298.21	16.53	39.30		**36.20**	

Average Quarterly Dose in mRad: **35.46**

Std Dev: **1.4**

USGS — On-Site

SNL TLD# E8032

SX 3930	10/2/2007 10:50	1/9/2008 9:40	# of Days:	98.95	Voltage Drop:	77
Calibration Factor:	Dose (µR):	Dose Rate (µR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.89	40607.73	17.10	40.61		**37.45**	
SX 3949	10/2/2007 10:50	1/9/2008 9:40	# of Days:	98.95	Voltage Drop:	73
Calibration Factor:	Dose (µR):	Dose Rate (µR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.90	38510.51	16.22	38.51		**35.51**	
SX 3950	10/2/2007 10:50	1/9/2008 9:40	# of Days:	98.95	Voltage Drop:	75
Calibration Factor:	Dose (µR):	Dose Rate (µR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.91	39331.71	16.56	39.33		**36.27**	

Average Quarterly Dose in mRad: **36.41**

Std Dev: **1.0**

ITRI — On-Site

SNL TLD# N/A

SX 4077	10/2/2007 10:30	1/9/2008 9:30	# of Days:	98.96	Voltage Drop:	74
Calibration Factor:	Dose (µR):	Dose Rate (µR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.85	39961.28	16.83	39.96		36.85	
SX 4096	10/2/2007 10:30	1/9/2008 9:30	# of Days:	98.96	Voltage Drop:	75
Calibration Factor:	Dose (µR):	Dose Rate (µR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.90	39534.20	16.65	39.53		36.45	
SX 4097	10/2/2007 10:30	1/9/2008 9:30	# of Days:	98.96	Voltage Drop:	75
Calibration Factor:	Dose (µR):	Dose Rate (µR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.89	39629.20	16.69	39.63		36.54	

Average Quarterly Dose in mRad: **36.62**

Std Dev: **0.21**

McCormick Gate — On-Site — SNL TLD# E8007

SX 4024	10/2/07 10:00	1/9/08 9:05	# of Days:	98.96	Voltage Drop:	71
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.88	37559.84	15.81	37.56		34.63	
SX 4028	10/2/07 10:00	1/9/08 9:05	# of Days:	98.96	Voltage Drop:	76
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.89	40152.18	16.91	40.15		37.02	
SX 4033	10/2/07 10:00	1/9/08 9:05	# of Days:	98.96	Voltage Drop:	76
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.88	40230.83	16.94	40.23		37.10	

Average Quarterly Dose in mRad: 36.25
Std Dev: 1.40

Four Hills — On-Site — SNL TLD# E8009

SX 4101	10/2/2007 11:15	1/9/2008 14:50	# of Days:	99.15	Voltage Drop:	82
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.90	43018.22	18.08	43.02		39.59	
SX 4104	10/2/2007 11:15	1/9/2008 14:50	# of Days:	99.15	Voltage Drop:	85
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.90	45026.82	18.92	45.03		41.44	
SX 4112	10/2/2007 11:15	1/9/2008 14:50	# of Days:	99.15	Voltage Drop:	81
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.89	43115.41	18.12	43.12		39.68	

Average Quarterly Dose in mRad: 40.24
Std Dev: 1.04

Officer's Club — On-Site — SNL TLD# E8014

SX 4002	10/2/2007 9:00	1/9/2008 14:25	# of Days:	99.23	Voltage Drop:	72
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.90	37961.18	15.94	37.96		34.91	
SX 4055	10/2/2007 9:00	1/9/2008 14:25	# of Days:	99.23	Voltage Drop:	76
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.89	40247.21	16.90	40.25		37.01	
SX 4065	10/2/2007 9:00	1/9/2008 14:25	# of Days:	99.23	Voltage Drop:	75
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.91	39174.91	16.45	39.17		36.03	

Average Quarterly Dose in mRad: 35.98
Std Dev: 1.05

Oak Flats — Off-Site — SNL TLD# E9010

SX 3975	10/3/2007 10:40	1/8/2008 11:22	# of Days:	97.03	Voltage Drop:	73
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.90	38193.34	16.40	38.19		35.92	
SX 4068	10/3/2007 10:40	1/8/2008 11:22	# of Days:	97.03	Voltage Drop:	75
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.89	39839.52	17.11	39.84		37.47	
SX 4090	10/3/2007 10:40	1/8/2008 11:22	# of Days:	97.03	Voltage Drop:	76
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.88	40468.52	17.38	40.47		38.06	

Average Quarterly Dose in mRad: 37.15
Std Dev: 1.10

Tijeras Fire Station — Off-Site — SNL TLD# E9012

SX 3945	10/3/2007 11:15	1/8/2008 11:57	# of Days:	97.03	Voltage Drop:	68
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.91	35500.78	15.24	35.50		33.39	
SX 3997	10/3/2007 11:15	1/8/2008 11:57	# of Days:	97.03	Voltage Drop:	67
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.91	35260.01	15.14	35.26		33.16	
SX 4009	10/3/2007 11:15	1/8/2008 11:57	# of Days:	97.03	Voltage Drop:	66
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.90	34689.36	14.90	34.69		32.62	

Average Quarterly Dose in mRad: 33.06
Std Dev: 0.39

Placitas Fire Station — Off-Site — SNL TLD# E9019

SX 3988	10/3/2007 12:15	1/8/2008 14:00	# of Days:	97.07	Voltage Drop:	71
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.90	37334.90	16.03	37.33		35.10	
SX 4010	10/3/2007 12:15	1/8/2008 14:00	# of Days:	97.07	Voltage Drop:	70
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.91	36717.26	15.76	36.72		34.51	
SX 4053	10/3/2007 12:15	1/8/2008 14:00	# of Days:	97.07	Voltage Drop:	74
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.88	39148.76	16.80	39.15		36.80	

Average Quarterly Dose in mRad: 35.47
Std Dev: 1.19

Corrales Fire Station — Off-Site — SNL TLD# E9021

SX 3960	10/3/2007 13:05	1/8/2008 13:15	# of Days:	97.01	Voltage Drop:	79
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.90	41495.64	17.82	41.50		39.03	
SX 3976	10/3/2007 13:05	1/8/2008 13:15	# of Days:	97.01	Voltage Drop:	76
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.95	39023.03	16.76	39.02		36.71	
SX 3987	10/3/2007 13:05	1/8/2008 13:15	# of Days:	97.01	Voltage Drop:	78
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.91	41052.48	17.63	41.05		38.62	

Average Quarterly Dose in mRad: 38.12

Std Dev: 1.24

Los Lunas Fire Station — Off-Site — SNL TLD# E9027

SX 3958	10/3/2007 14:45	1/8/2008 9:00	# of Days:	96.76	Voltage Drop:	76
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.90	40056.05	17.25	40.06		37.77	
SX 3964	10/3/2007 14:45	1/8/2008 9:00	# of Days:	96.76	Voltage Drop:	76
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.84	41041.20	17.67	41.04		38.70	
SX 3977	10/3/2007 14:45	1/8/2008 9:00	# of Days:	96.76	Voltage Drop:	75
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.85	40258.77	17.34	40.26		37.97	

Average Quarterly Dose in mRad: 38.15

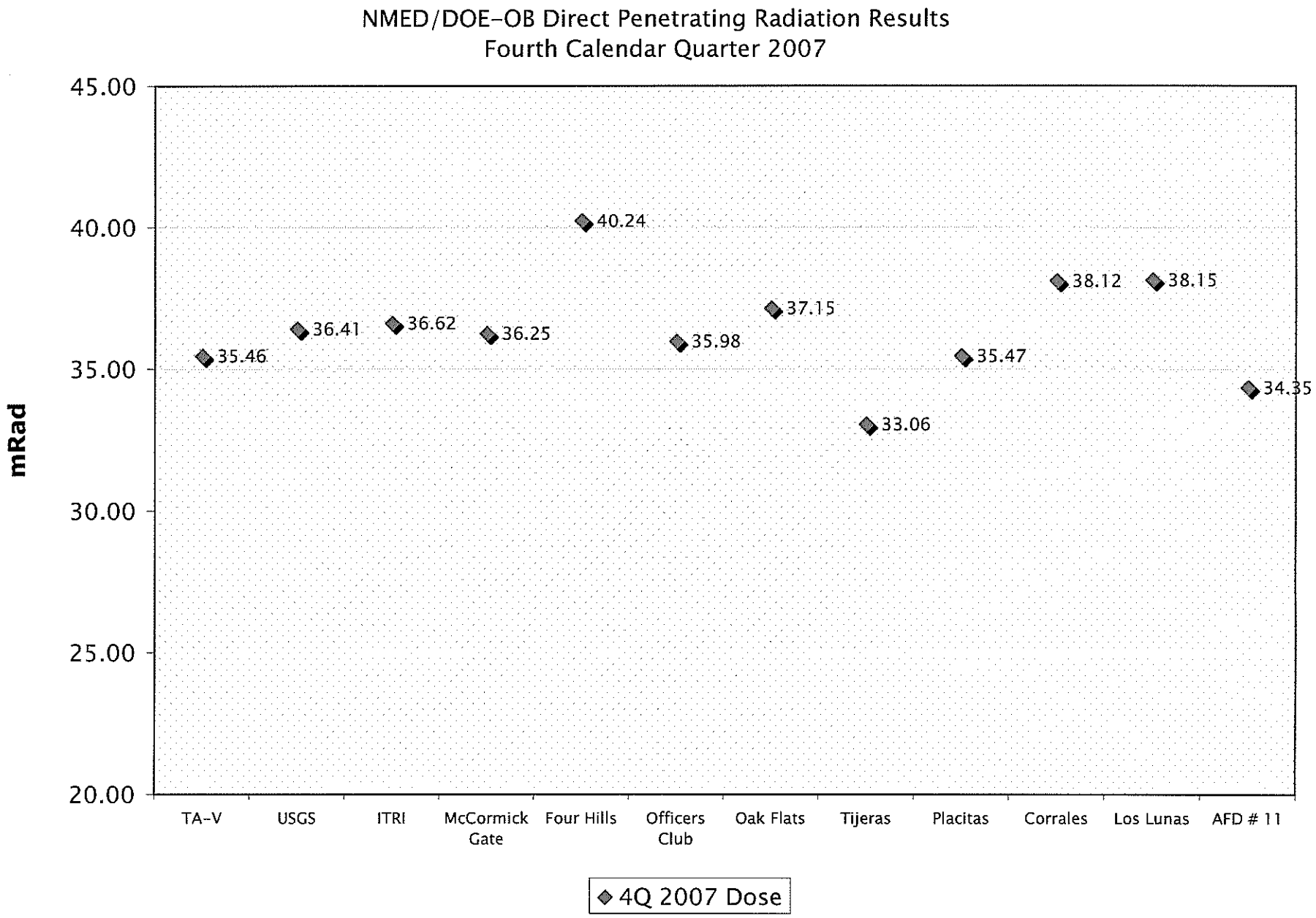
Std Dev: 0.49

ABQ Fire Station #11 — Off-Site — SNL TLD# E9016

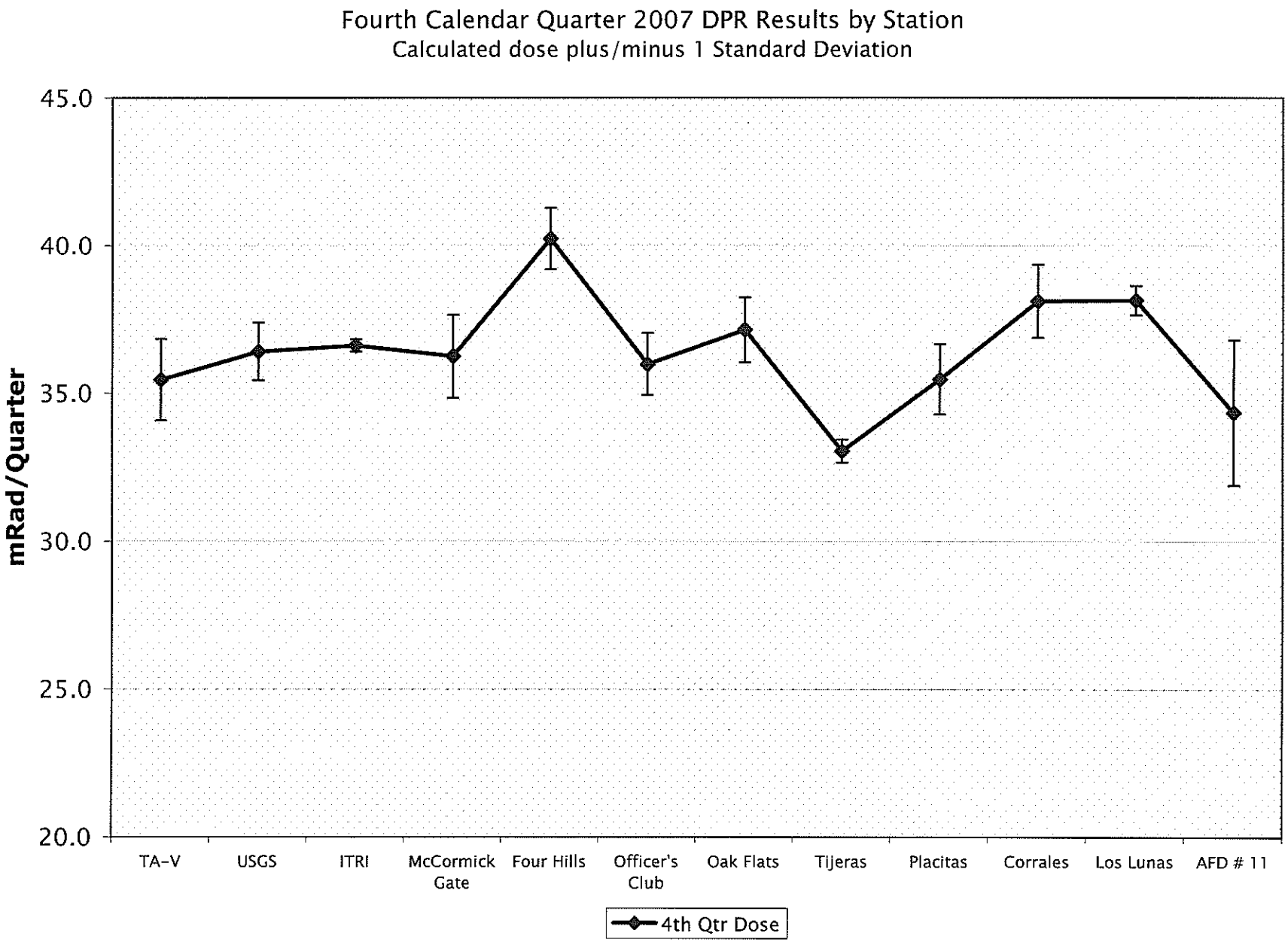
SX 4006	10/2/07 11:45	1/8/08 14:51	# of Days:	98.13	Voltage Drop:	67
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.96	33993.93	14.43	33.99		31.61	
SX 4015	10/2/07 11:45	1/8/08 14:51	# of Days:	98.13	Voltage Drop:	71
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.89	37744.75	16.03	37.74		35.10	
SX 4026	10/2/07 11:45	1/8/08 14:51	# of Days:	98.13	Voltage Drop:	74
Calibration Factor:	Dose (μR):	Dose Rate (μR/h):	Total Dose (mRad):		Quaterly Dose (mRad):	
1.90	39084.36	16.60	39.08		36.34	

Average Quarterly Dose in mRad: 34.35

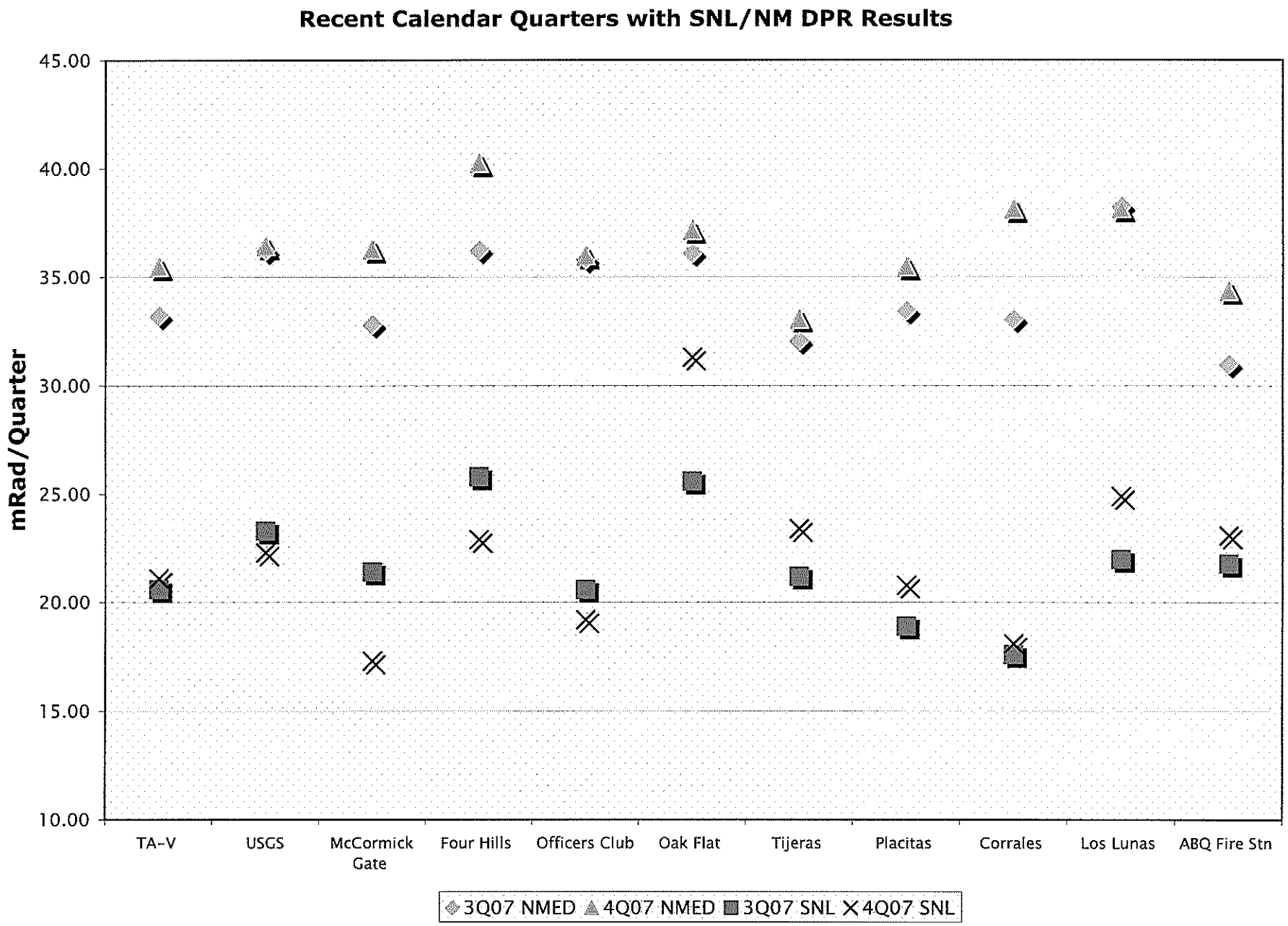
Std Dev: 2.45


NMED/DOE-OB Direct Penetrating Radiation Results
Fourth Calendar Quarter 2007
mRad
45.00
40.00
35.00
30.00
25.00
20.00
35.46
36.41
36.62
36.25
40.24
35.98
37.15
33.06
35.47
38.12
38.15
34.35
TA-V
USGS
ITRI
McCormick Gate
Four Hills
Officers Club
Oak Flats
Tijeras
Placitas
Corrales
Los Lunas
AFD # 11
4Q 2007 Dose

Graph 1


Fourth Calendar Quarter 2007 DPR Results by Station
Calculated dose plus/minus 1 Standard Deviation
mRad/Quarter
45.0
40.0
35.0
30.0
25.0
20.0
TA-V
USGS
ITRI
McCormick Gate
Four Hills
Officer's Club
Oak Flats
Tijeras
Placitas
Corrales
Los Lunas
AFD # 11
4th Qtr Dose

Graph 2


Recent Calendar Quarters with SNL/NM DPR Results
mRad/Quarter
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
TA-V
USGS
McCormick Gate
Four Hills
Officers Club
Oak Flat
Tijeras
Placitas
Corrales
Los Lunas
ABQ Fire Stn
3Q07 NMED
4Q07 NMED
3Q07 SNL
4Q07 SNL

Graph 3