

BUX-MONT RADIOLOGY GROUP

295 EAST STREET ROAD
WARMINSTER, PA 18974

DIAGNOSTIC RADIOLOGY
NORMAN HAUSER, M. D.
FRANK A. PIRO, M. D.

TELEPHONE: 672-4372

May 6, 1996

United States Nuclear
Regulatory Commission
Charles W. Hehl, Director
Division of Nuclear Materials Safety

License # 37-17377-01
Docket # 030-12658
Cal # 1-96-004

Dear Mr. Hehl:

This letter is in response to your Confirmatory Action Letter of 4/4/96. We have taken all the corrective measures as listed in the letter and in response to the telephone conversations with Mr. Shambaky and Mr. Dwyer.

1. Our Quality Control for the dose calibrator has been corrected and tests have been performed and checked by me. The recordings have all been checked, signed and dated by me. The dose calibrator has been checked out and is now being used properly with the correct settings. We consulted the nuclear pharmacist on this matter who advised us of the proper settings and confirmed our results.
2. Our technologist has become thoroughly familiarized with the proper use of the dose calibrator and is doing the proper confirmatory measurements now. I have been and will continue to check her readings.
3. I have taken the measures of prescribing the proper dose for patients who are going to be scheduled for I131 thyroid testing before the studies are performed. The scripts will be documented.
4. Our Co 57 and Cs 137 reference standards have been and continue to be checked and the readings are falling well within the 10% deviation range. These readings are being documented and confirmed by me. The readings are being done 2 times a week when no patients are scheduled and also prior to each patient's study.
5. The leak test will be done at 6 month intervals as required by 10 CFR 35.59. It was just performed and documented.

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MAY - 9 1996

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PDR ADOCK 03012658
C PDR

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6. The I131 Capsule will be calibrated by us prior to administrating it to the patient. The dose will be confirmed by me, signed and dated.
7. A ring dosimeter has been ordered for me in addition to the one used by the technologist. This is in addition to the usual film badge which we wear.

If we have missed anything please let me know and I will promptly comply and/or correct.

Sincerely yours,

Norman Hauser MD
Norman Hauser, M.D.

NH/jks

DOSE CALIBRATOR ACCURACY

Source: Cs 57
 Serial#: 5206070-050
 Cal. Date: 4-27-93
 Activity: 5.5 mCi

Actual Activity: .341

*Assayed Activity: .333, .340, .333 = .335

% Variance: .618

$$\frac{.335 - .341}{.341} = .618$$

Source: 20 mCi Tc 99m
 Serial#: TC0409-1170
 Cal. Date: 4-26-96
 Activity: 35.420

Actual Activity: 34.9

*Assayed Activity: 35.0, 35.2, 34.9 = 35.03

% Variance: .011

$$\frac{35.03 - 35.42}{35.42} = .011$$

* Average of three readings

% Variance = $\frac{\text{Assayed Act.} - \text{Actual Activity (decay corrected)}}{\text{Actual Activity (Decay corrected)}}$

Action Level: $\pm 5\%$

Corrective Actions: none needed

Performed by: SK

Date: 4-26-96

M. Hansen MD -
OK - 4/26/96

Source: Cs 137
 Serial#: 212004
 Cal. Date: 3-17-86
 Activity: .218

Actual Activity: .24, .219, .22 = .218

*Assayed Activity: .218

% Variance: .0

$$\frac{.218 - .218}{.218} = 0$$

Source: _____
 Serial#: _____
 Cal. Date: _____
 Activity: _____

Actual Activity: _____

*Assayed Activity: _____

% Variance: _____

Sodium Pertechnetate
 TCD409-11703 35.420 mCi/ml 09:00
 20.00 mCi .56 ml
 Disp 20.000 mCi +/-10%

Synco International Corp
 650 Elmwood Avenue
 Sharon Hill PA 19079
 Burmont Radiology

610/461-7226
 Dr. HAUSER

Tc99m Sodium Pertechnetate 26 APR 96 # 920547
 Lot TCD409-11703 Expires 04/26/96 14:00
 Qty. Ordered 20.00 mCi
 Assay 35.420 mCi/ml As Of 09:00
 Volume .56 ml
 Qty. Dispensed 20.00 mCi +/- 10%
 Qty. Admin. mCi As Of By

Pt. Per Phys Order

SOURCE

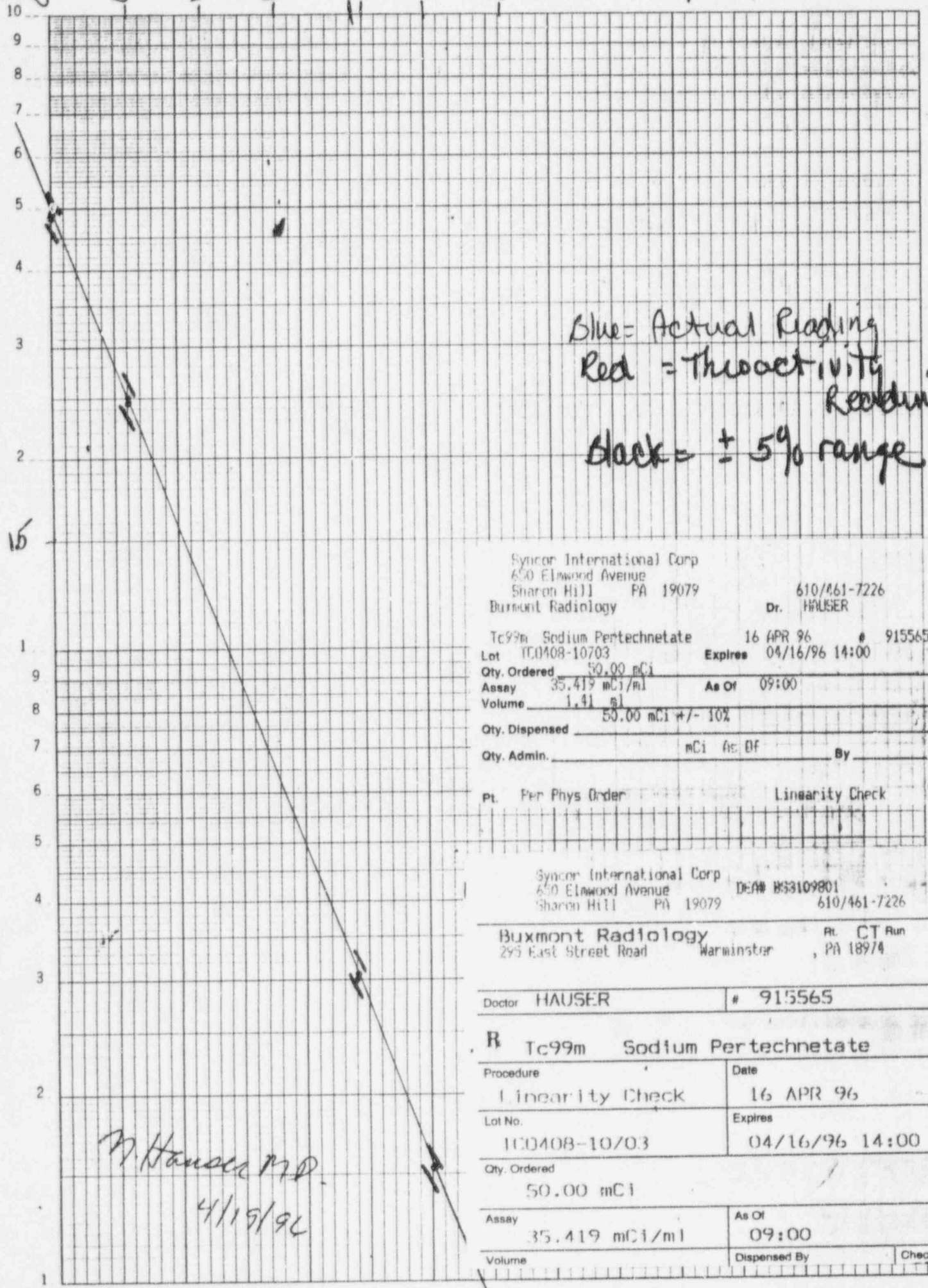
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Apr 16, 17, 18 1996

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SEMI-LOGARITHMIC 42 CYCLES X 70 DIVISIONS



Syncor International Corp 650 Elmwood Avenue Sharon Hill PA 19079 Burnmont Radiology		610/461-7226 Dr. HAUSER
Tc99m Sodium Pertechnetate Lot TC0408-10703		16 APR 96 # 915565 Expires 04/16/96 14:00
Qty. Ordered 50.00 mCi Assay 35.419 mCi/ml Volume 1.41 ml		As Of 09:00
Qty. Dispensed 50.00 mCi $\pm 10\%$		
Qty. Admin. _____ mCi As Of _____ By _____		
Pt. Per Phys Order _____		Linearity Check _____

Syncor International Corp 650 Elmwood Avenue Sharon Hill PA 19079		DEAN B33109801 610/461-7226
Buxmont Radiology 295 East Street Road Warminster PA 18974		Rt. CT Run 1
Doctor HAUSER		# 915565
R Tc99m Sodium Pertechnetate		
Procedure Linearity Check		Date 16 APR 96
Lot No. TC0408-10/03		Expires 04/16/96 14:00
Qty. Ordered 50.00 mCi		
Assay 35.419 mCi/ml		As Of 09:00
Volume _____		Dispensed By _____ Checked _____

M. Hauser MD.
 4/15/96

CUSTOMER COPY

Certificate of Instrument Calibration

Facility: Buxmont Radiology

Manufacturer: Bicron

Detector Type: GM

Battery Check: OK

Calibration Geometry: Perpendicular

Model: 2000

Detector Model: Pancake

Dedicated Check Source:

n/a

ID #: 097

Serial No. A668L

Serial No. A881L

mR/hr

Window: Closed

Scale Multiplier	Distance (cm.)	Calculated Reading	Measured Reading	Correction Factor
X 1000	45.8	1500	1450	1.03
X 1000	79.3	500	500	1.00
X 100	144.7	150	140	1.07
X 100	250.6	50	52	0.96
X 10	328.5	15	15	1.00
X 10	374.8	5.0	5.0	1.00
X 1	143.3	1.5	1.5	1.00
X 1	248.1	0.5	0.5	1.00
X 0.1	138.5	0.15	0.15	1.00
X 0.1	239.9	0.05	0.05	1.00

OK
M. Hansen MP
4/15/96

Mid-America Calibrations

5500 Buena Vista

Suite 101

Shawnee Mission, Kansas 66205

913/789-8757

Calibrated By: 

Date Calibrated:

April 4, 1996

Date Due:

April 4, 1997

Kansas License #: 33-B429-01

Arkansas License #: ARK-625-BP

The above instrument was calibrated with a J.L. Shepherd Model 28-6A, 1.2 Ci Cs-137 calibrator, serial #10018, or a Ludlum Model 500-2 Pulser, serial #127533.

The output is traceable to the NBS (N.I.S.T.) and all instruments are calibrated in accordance with MIL-STD 45662A and ANSI N323-1978.

Pancake probes are calibrated to the back of the probe.

YORK

MEDICAL PHYSICS

LEAK TEST CERTIFICATE

Facility: Bux-mont Radiology
295 E Street Road
Warminster, PA 18974
ATTN: Nuclear Medicine

Lab #: 72

Page 1 of 1

Wipe Date: 01-Feb-96
 Counting Date: 12-Feb-96

Frequency: Semi-Annual
 Next Due: 01-Aug-96

Sample No.	1	2	N/A
Radionuclide	Co-57	Cs-137	
Manufacturer	NEN	CIS	
Type	DCRS	DCRS	
Serial No.	S206070-050	220/171	
Cal. Date	4/27/93	3/17/86	
Activity	5.5 mCi	9.97 MBq	
Net CPM	9	7	
Results in uCi	5.55E-06	4.15E-05	

Action Level: Any contamination greater than 0.005 uCi or 5.00E-03.

Test Results: Passed

Recommendation: Removable contamination is within the action level.

Counting Equipment: Nucleus Quantum 8 MCA with well
Serial #: 9109-0502

Wiped By: _____

Calculated By: Deen Wilson, Authorized User

Reviewed By: _____, Facility R.S.O.

Leak testing of radioactive sealed sources should be performed on a semi-annual basis, unless otherwise specified in your radioactive material license.



ALARA Review • Radiology Tube Calibration • Survey Meter Calibration

23659 Via Del Rio • Yorba Linda, CA 92687 • R.A.M.L. NO. 5535-30 • 714/692-9675 • FAX 714/692-5348

M. Hansen MD.
3/6/96

Product Id : C057DC Co-57
Reference Standard

Calibration Assay : 5.500 mCi
As Of : 12:00 04/27/93
Half Life : 271.700 D
Worksheet Period : 364.000 Days

Worksheet Beginning Time : 12:00
Date : 04/01/96
Worksheet Ending Time : 12:00
Date : 03/31/97

Manufacturer Name :
Calibrator Serial#:

Date	(-5%)	Calc Assay	(+5%)	Meas Assay Background	Date	(-5%)	Calc Assay	(+5%)	Meas Assay Background
04/01/96	1	0.341	0.350	0.377	05/19/96	1	0.302	0.317	0.333
04/02/96	1	0.340	0.358	0.376	05/20/96	1	0.301	0.317	0.332
04/03/96	1	0.339	0.357	0.375	05/21/96	1	0.300	0.316	0.332
04/04/96	1	0.338	0.356	0.374	05/22/96	1	0.299	0.315	0.331
04/05/96	1	0.337	0.355	0.373	05/23/96	1	0.299	0.314	0.330
04/06/96	1	0.337	0.354	0.372	05/24/96	1	0.298	0.313	0.329
04/07/96	1	0.336	0.353	0.371	05/25/96	1	0.297	0.313	0.328
04/08/96	1	0.335	0.352	0.370	05/26/96	1	0.296	0.312	0.327
04/09/96	1	0.334	0.352	0.369	05/27/96	1	0.295	0.311	0.327
04/10/96	1	0.333	0.351	0.368	05/28/96	1	0.295	0.310	0.326
04/11/96	1	0.332	0.350	0.367	05/29/96	1	0.294	0.309	0.325
04/12/96	1	0.331	0.349	0.366	05/30/96	1	0.293	0.309	0.324
04/13/96	1	0.331	0.348	0.365	05/31/96	1	0.292	0.308	0.323
04/14/96	1	0.330	0.347	0.364	06/01/96	1	0.292	0.307	0.322
04/15/96	1	0.329	0.346	0.364	06/02/96	1	0.291	0.306	0.322
04/16/96	1	0.328	0.345	0.363	06/03/96	1	0.290	0.306	0.321
04/17/96	1	0.327	0.344	0.362	06/04/96	1	0.290	0.305	0.320
04/18/96	1	0.326	0.344	0.361	06/05/96	1	0.289	0.304	0.319
04/19/96	1	0.326	0.343	0.360	06/06/96	1	0.288	0.303	0.318
04/20/96	1	0.325	0.342	0.359	06/07/96	1	0.287	0.302	0.318
04/21/96	1	0.324	0.341	0.358	06/08/96	1	0.287	0.302	0.317
04/22/96	1	0.323	0.340	0.357	06/09/96	1	0.286	0.301	0.316
04/23/96	1	0.322	0.339	0.356	06/10/96	1	0.285	0.300	0.315
04/24/96	1	0.321	0.338	0.355	06/11/96	1	0.284	0.299	0.314
04/25/96	1	0.321	0.338	0.354	06/12/96	1	0.284	0.299	0.314
04/26/96	1	0.320	0.337	0.353	06/13/96	1	0.283	0.298	0.313
04/27/96	1	0.319	0.336	0.353	06/14/96	1	0.282	0.297	0.312
04/28/96	1	0.318	0.335	0.352	06/15/96	1	0.282	0.296	0.311
04/29/96	1	0.317	0.334	0.351	06/16/96	1	0.281	0.296	0.310
04/30/96	1	0.317	0.333	0.350	06/17/96	1	0.280	0.295	0.310
05/01/96	1	0.316	0.332	0.349	06/18/96	1	0.279	0.294	0.309
05/02/96	1	0.315	0.332	0.348	06/19/96	1	0.279	0.293	0.308
05/03/96	1	0.314	0.331	0.347	06/20/96	1	0.278	0.293	0.307
05/04/96	1	0.313	0.330	0.346	06/21/96	1	0.277	0.292	0.306
05/05/96	1	0.313	0.329	0.345	06/22/96	1	0.277	0.291	0.306
05/06/96	1	0.312	0.328	0.345	06/23/96	1	0.276	0.290	0.305
05/07/96	1	0.311	0.327	0.344	06/24/96	1	0.275	0.290	0.304
05/08/96	1	0.310	0.326	0.343	06/25/96	1	0.274	0.289	0.303
05/09/96	1	0.309	0.326	0.342	06/26/96	1	0.274	0.288	0.303
05/10/96	1	0.309	0.325	0.341	06/27/96	1	0.273	0.287	0.302
05/11/96	1	0.308	0.324	0.340	06/28/96	1	0.272	0.287	0.301
05/12/96	1	0.307	0.323	0.339	06/29/96	1	0.272	0.286	0.300
05/13/96	1	0.306	0.322	0.338	06/30/96	1	0.271	0.285	0.299
05/14/96	1	0.305	0.322	0.338	07/01/96	1	0.270	0.284	0.299
05/15/96	1	0.305	0.321	0.337	07/02/96	1	0.270	0.284	0.298
05/16/96	1	0.304	0.320	0.336	07/03/96	1	0.269	0.283	0.297
05/17/96	1	0.303	0.319	0.335	07/04/96	1	0.268	0.282	0.296
05/18/96	1	0.302	0.318	0.334	07/05/96	1	0.268	0.282	0.296

Run Date 04/05/96

DOSE CALIBRATOR QUALITY CONTROL WORK SHEET

Product Id : C5137D Cs-137
Reference Standard
Manufacturer Name :
Calibrator Serial#:

Calibration Assay : 269,500 uCi
As Of : 12:00 03/17/86
Half Life : 30.174 Y
Worksheet Period : 364,000 Days

Worksheet Beginning Time : 12:00
Date : 04/01/96
Worksheet Ending Time : 12:00
Date : 03/31/97

Date	(-5%)	Calc Assay	(+5%)	Meas Assay Background	Date	(-5%)	Calc Assay	(+5%)	Meas Assay Background
01/01/96		203.280	213.979	224.678	05/19/96		202.667	213.334	224.000
01/02/96		203.267	213.965	224.664	05/20/96		202.654	213.320	223.986
01/03/96		203.254	213.952	224.650	05/21/96		202.641	213.307	223.972
01/04/96		203.241	213.938	224.635	05/22/96		202.629	213.293	223.958
01/05/96		203.229	213.925	224.621	05/23/96		202.616	213.280	223.944
01/06/96		203.216	213.911	224.607	05/24/96		202.603	213.267	223.930
01/07/96		203.203	213.898	224.593	05/25/96		202.591	213.253	223.916
01/08/96		203.190	213.885	224.579	05/26/96		202.578	213.240	223.902
01/09/96		203.178	213.871	224.565	05/27/96		202.565	213.226	223.888
01/10/96		203.165	213.858	224.551	05/28/96		202.552	213.213	223.874
01/11/96		203.152	213.844	224.536	05/29/96		202.540	213.200	223.860
01/12/96		203.139	213.831	224.522	05/30/96		202.527	213.186	223.845
01/13/96		203.126	213.817	224.508	05/31/96		202.514	213.173	223.831
01/14/96		203.114	213.804	224.494	06/01/96		202.501	213.159	223.817
01/15/96		203.101	213.790	224.480	06/02/96		202.489	213.146	223.803
01/16/96		203.088	213.777	224.466	06/03/96		202.476	213.132	223.789
01/17/96		203.075	213.764	224.452	06/04/96		202.463	213.119	223.775
01/18/96		203.063	213.750	224.438	06/05/96		202.450	213.106	223.761
01/19/96		203.050	213.737	224.423	06/06/96		202.438	213.092	223.747
01/20/96		203.037	213.723	224.409	06/07/96		202.425	213.079	223.733
01/21/96		203.024	213.710	224.395	06/08/96		202.412	213.065	223.719
01/22/96		203.011	213.696	224.381	06/09/96		202.399	213.052	223.705
01/23/96		202.999	213.683	224.367	06/10/96		202.387	213.039	223.691
01/24/96		202.986	213.669	224.353	06/11/96		202.374	213.025	223.677
01/25/96		202.973	213.656	224.339	06/12/96		202.361	213.012	223.662
01/26/96		202.960	213.643	224.325	06/13/96		202.349	212.998	223.648
01/27/96		202.948	213.629	224.311	06/14/96		202.336	212.985	223.634
01/28/96		202.935	213.616	224.296	06/15/96		202.323	212.972	223.620
01/29/96		202.922	213.602	224.282	06/16/96		202.310	212.958	223.606
01/30/96		202.909	213.589	224.268	06/17/96		202.298	212.945	223.592
05/01/96		202.897	213.575	224.254	06/18/96		202.285	212.931	223.578
05/02/96		202.884	213.562	224.240	06/19/96		202.272	212.918	223.564
05/03/96		202.871	213.548	224.226	06/20/96		202.259	212.905	223.550
05/04/96		202.858	213.535	224.212	06/21/96		202.247	212.891	223.536
05/05/96		202.846	213.522	224.198	06/22/96		202.234	212.878	223.522
05/06/96		202.833	213.508	224.184	06/23/96		202.221	212.865	223.508
05/07/96		202.820	213.495	224.170	06/24/96		202.209	212.851	223.494
05/08/96		202.807	213.481	224.155	06/25/96		202.196	212.838	223.480
05/09/96		202.795	213.468	224.141	06/26/96		202.183	212.824	223.466
05/10/96		202.782	213.454	224.127	06/27/96		202.170	212.811	223.452
05/11/96		202.769	213.441	224.113	06/28/96		202.158	212.798	223.437
05/12/96		202.756	213.428	224.099	06/29/96		202.145	212.784	223.423
05/13/96		202.743	213.414	224.085	06/30/96		202.132	212.771	223.409
05/14/96		202.731	213.401	224.071	07/01/96		202.120	212.757	223.395
05/15/96		202.718	213.387	224.057	07/02/96		202.107	212.744	223.381
05/16/96		202.705	213.374	224.043	07/03/96		202.094	212.731	223.367
05/17/96		202.692	213.361	224.029	07/04/96		202.081	212.717	223.353
05/18/96		202.680	213.347	224.014	07/05/96		202.069	212.704	223.339

RECEIVED