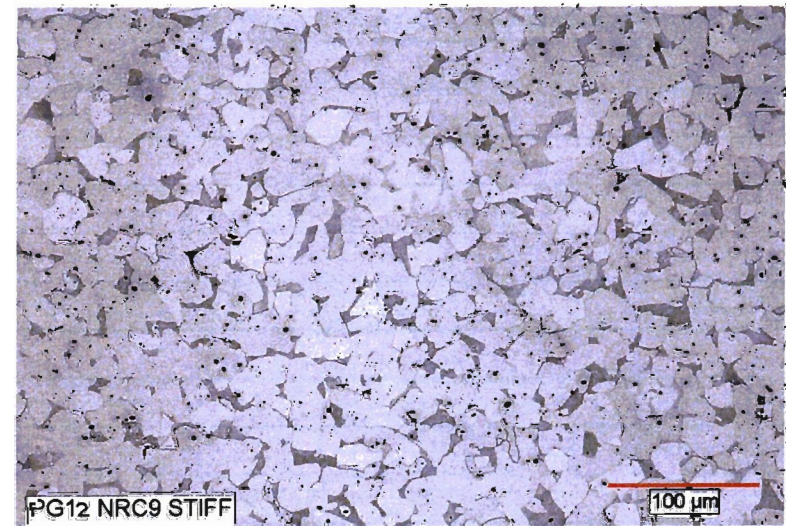
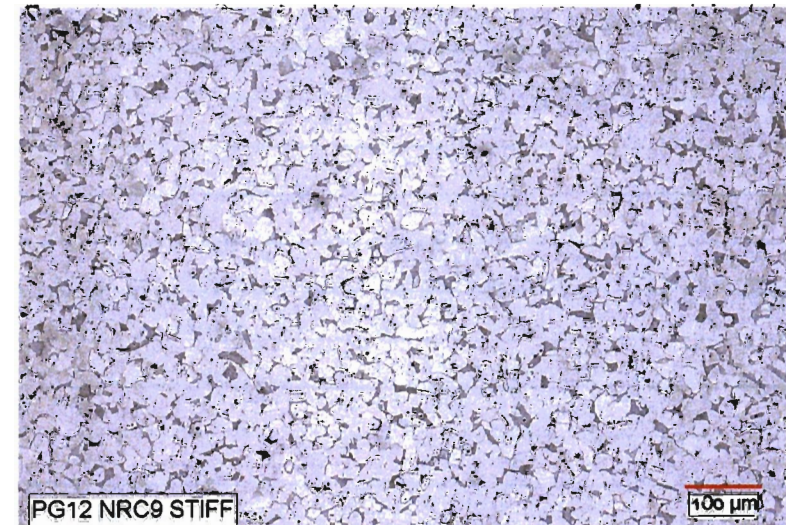


Recorded by: *[Signature]*

Date: 9/14/07

Verified by: _____

Date: _____

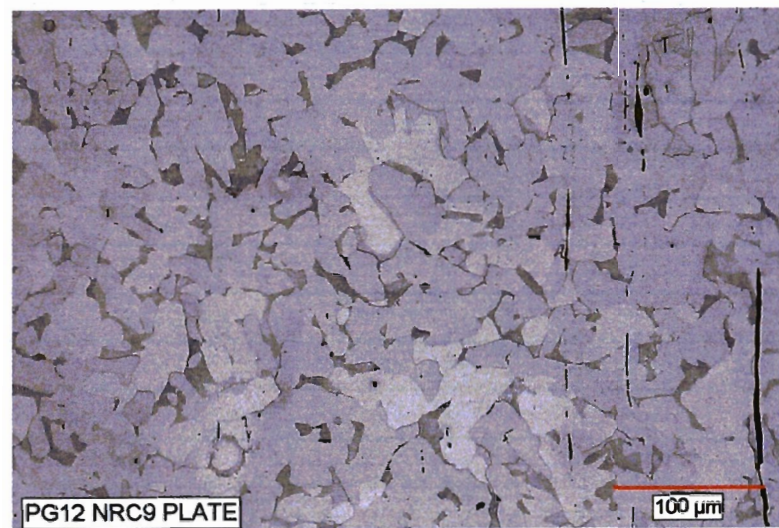
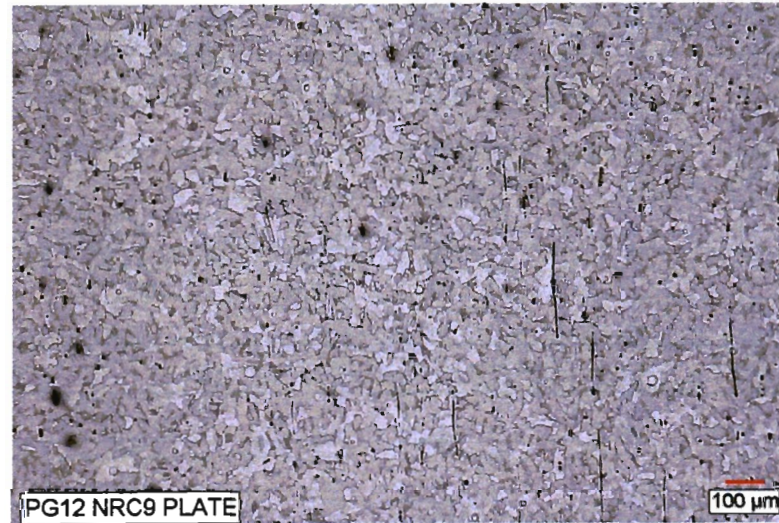


Recorded by: *[Signature]*

Date: 9/14/07

Verified by: _____

Date: _____



Recorded by:

[Signature]

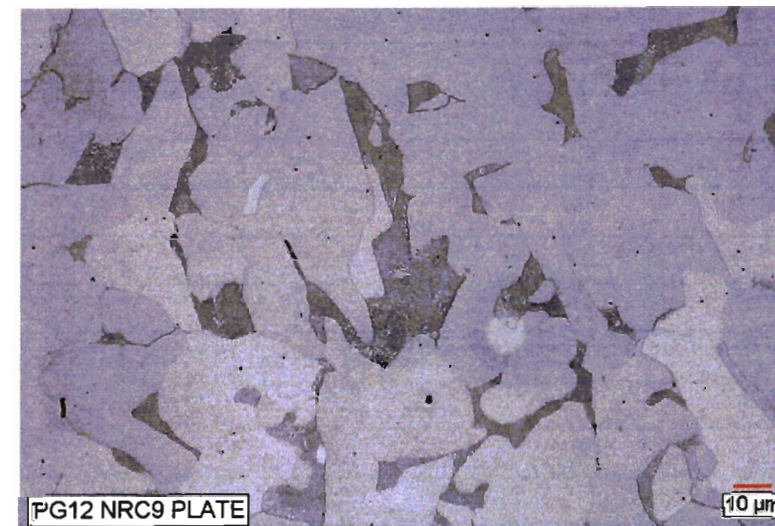
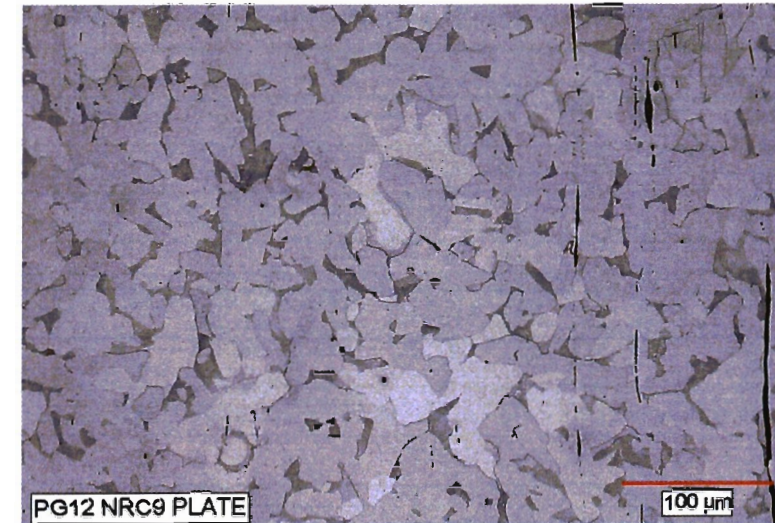
Date

9/14/07

Verified by:

[Signature]

Date



Recorded by:

[Signature]

Date

9/14/07

Verified by:

[Signature]

Date

[Signature]

Thermal treatment of I580 specimens

Description of Specimens: Samples cut from the I580 bridge include the following

NRC Sample Number	Girder Identification	Description	Examination
NRC 5	BG 7	Lower plate with side and Weld	Weld and Base metal
NRC 9	PG 12	Plate with stiffener near MB 18 end	Weld and Base metal

Specimens from these samples were cut which contain weld material. The samples will be thermally treated according to the following schedule:

NRC Sample Number	Girder Identification	Thermal Aging Temperature	Time (hours) at Temperature	Cooling
NRC 9-2	PG 12	550 °C	3	Lab air cool
NRC 9-3	PG 12	600 °C	3	Lab air cool
NRC 9-4	PG 12	650 °C	3	Lab air cool
NRC 9-5	PG 12	700 °C	3	Lab air cool
NRC 9-6	PG 12	750 °C	3	Lab air cool
NRC 9-7	PG 12	TBD	TDB	TDB
NRC 5-2	BG 7	TBD	TDB	TDB
NRC 5-3	BG 7	TBD	TDB	TDB
NRC 5-4	BG 7	TBD	TDB	TDB

Thermal exposure instructions

1. A sample from NRC 9 PG12 was cut from the web that does not contain weld material. This sample needs to be used to test heating time with a calibrated thermocouple. Record temperature every minute after being placed in an oven at 750 C. Discontinue temperature recording after temperature reaches 750 C.
2. Place specimens in the oven at temperature. Verify temperature at start and at end of exposure with a calibrated thermocouple.
3. After exposure time is reached, remove specimen and allow to cool in laboratory air.
4. After cooling, placed in marked bag with specimen identification, temperature of exposure and exposure time.
5. Record all data in scientific notebook.

Recorded by:

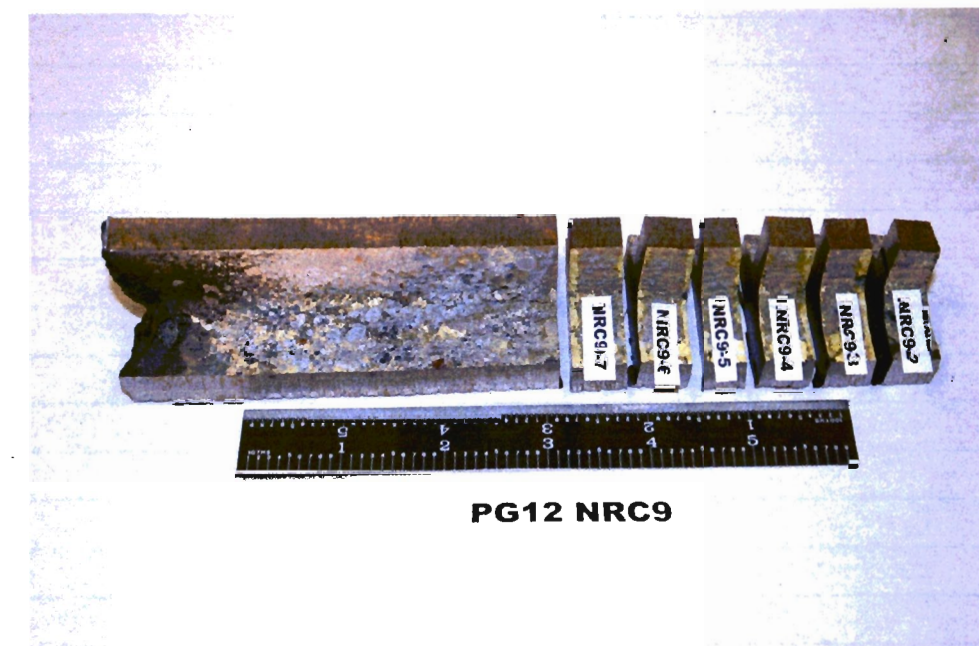
Paul D

Date

10/5/07

Verified by:

Date



Recorded by:

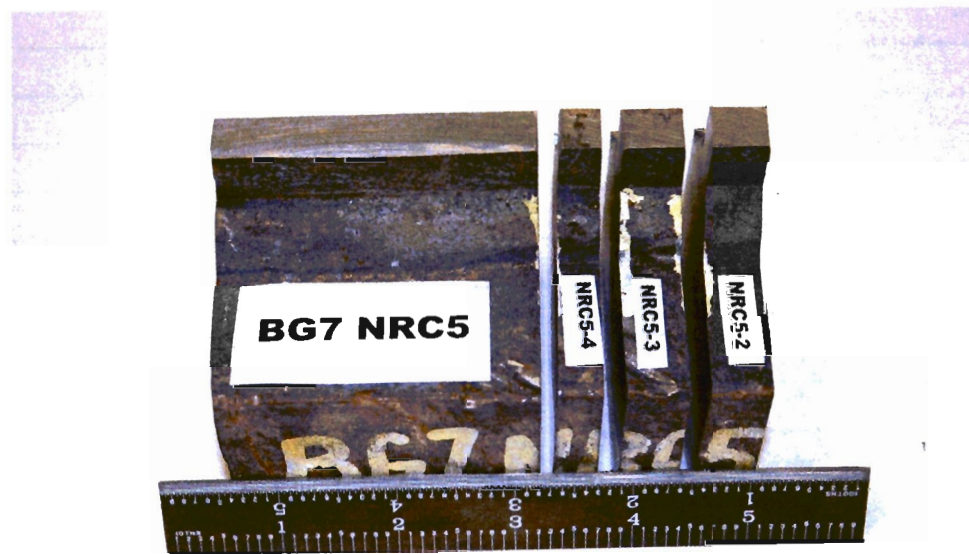
Paul D

Date

10/5/07

Verified by:

Date



Recorded by: *Paul D.*

Date: 10/5/07

Verified by:

Date

Thermally Aged Procedure

Quantity/Specimens = NRC 9

OVEN= Lindberg oven Model # 51333
SN# 909172

OVEN SETPOINT= 756 °C

OVEN TEMPERATURE= 756.6 °C

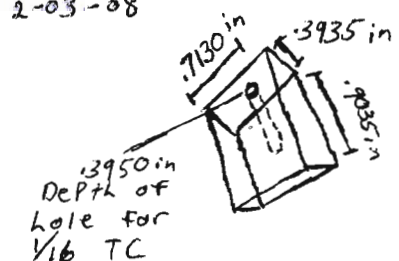
Measurement taken with OMEGA MICROPROCESSOR THERMOMETER MODEL# HH22
SN# T-94140 CAL= 4-26-07 DUE= 10-26-07
Thermocouple SN# 329 CAL= 8-03-07 DUE= 2-03-08

AMOUNT OF TIME = 6 min

Initial 22.5 °C

DETAILS= Specimen Temp

Seconds	Deg. °C	Seconds	Deg. °C	Seconds	Deg. °C
10	68.2	130	419.8	250	696.3
20	98.6	140	450.2	260	706.2
30	133.4	150	479.6	270	717.2
40	165.1	160	517.8	280	723.1
50	201.9	170	545.2	290	729.8
60	229.3	180	573.2	300	733.8
70	259.5	190	598.7	310	734.7
80	288.1	200	623.5	320	737.9
90	315.2	210	640.2	330	742.3
100	341.5	220	657.5	340	746.9
110	367.9	230	673.0	350	750.2
120	395.0	240	684.8	360	758.7



Recorded by: *Dustin Wall*

Date: 8-24-07

Verified by:

Date

Thermally Aged Procedure

Quantity/Specimens = NRC 9-6

OVEN= Lindberg oven Model # 51333
SN# 909172

OVEN SETPOINT= 750 °C

OVEN TEMPERATURE= 764.3 °C

Measurement taken with OMEGA MICROPROCESSOR THERMOMETER MODEL# H H 22
SN# T-94140 CAL= 4-26-07 DUE= 10-26-07
Thermocouple SN# 329 CAL= 8-03-07 DUE= 2-03-08

AMOUNT OF TIME = 3 hrs.

DETAILS= Put specimen NRC 9-6 in oven Temp dropped to 679.3 °C
Allowed 6 min. for specimen to temp
9:13 Put specimen in
9:19 start 3 hrs 764.3 °C
12:19 took specimen 9-6 out 776.6 °C
let specimen cool in lab air

Recorded by: *Justin Vell*

Date: 8-24-07

Verified by:

Date

Thermally Aged Procedure

Quantity/Specimens = NRC 9-5

OVEN= Lindberg oven model # 51333
SN# 909172

OVEN SETPOINT= 700

OVEN TEMPERATURE= 705.4 °C

Measurement taken with OMEGA MICROPROCESSOR THERMOMETER MODEL# H H 22
SN# T-94140 CAL= 4-26-07 DUE= 10-26-07
Thermocouple SN# 329 CAL= 8-03-07 DUE= 2-03-08

AMOUNT OF TIME = 3 hrs

DETAILS= Put specimen NRC 9-5 in oven Temp dropped to 642.9 °C
allowed 6 min for specimen to set to temp
12:30 Put specimen into oven
12:36 start 3 hrs
3:36 took specimen out of oven Ent temp 707.3 °C
let specimen 9-5 Lab cool

Recorded by: *Justin Vell*

Date: 8-24-07

Verified by:

Date

Thermally Aged Procedure

Quantity/Specimens = NRC 9-4

OVEN= Lindberg oven model # 51333
SN# 909172

OVEN SETPOINT= 650

OVEN TEMPERATURE= 659.3 °C

Measurement taken with OMEGA MICROPROCESSOR THERMOMETER MODEL# HH22
SN# T-94140 CAL= 4-26-07 DUE= 10-26-07
Thermocouple SN# 329 CAL= 8-03-07 DUE= 2-03-08

AMOUNT OF TIME = 3 hrs

DETAILS= Put specimen NRC 9-4 in oven. Temp dropped to 617.8 °C
 allowed 6 min for specimen to reach temp
 7:33 Put specimen in oven
 7:39 start 3 hrs
 10:39 took specimen out of oven 661.2 °C at end of test
 let NRC 9-4 lab cool

Recorded by:

Justin Vell

Date

8-24-07

Verified by:

Date

Thermally Aged Procedure

Quantity/Specimens = NRC 9-3

OVEN= Lindberg oven model # 51333
SN# 909172

OVEN SETPOINT= 600 °C

OVEN TEMPERATURE= ~~608.1 °C~~ 603.1 °CMeasurement taken with OMEGA MICROPROCESSOR THERMOMETER MODEL# HH22
SN# T-94140 CAL= 4-26-07 DUE= 10-26-07
Thermocouple SN# 329 CAL= 8-03-07 DUE= 2-03-08

AMOUNT OF TIME = 3 hrs

DETAILS= Put specimen NRC 9-3 in oven. Temp dropped to 556.5 °C
 allowed 6 min for specimen NRC 9-3 to reach temp

10:49 Put specimen in oven
 10:55 start 3 hrs
 1:55 took specimen out of oven
 let NRC 9-3 cool in lab air

Recorded by:

Justin Vell

Date

8-24-07

Verified by:

Date

Thermally Aged Procedure

Quantity/Specimens = NRC 9-2

OVEN= Lindberg oven model #51333
SN# 909172

OVEN SETPOINT= 550°C

OVEN TEMPERATURE= 568.2°C

Measurement taken with OMEGA MICROPROCESSOR THERMOMETER MODEL# HH22

Thermocouple SN# T-94140 CAL= 4-26-07 DUE= 10-26-07
SN# 329 CAL= 8-03-07 DUE= 2-03-08

AMOUNT OF TIME = 3 hrs

DETAILS= Put specimen NRC 9-2 in oven, temp dropped to 531.9°C
allowed 6 min for specimen NRC 9-2 to reach temp
9:40 Put specimen in oven
9:46 start 3 hrs
12:46 took specimen out of oven
let NRC 9-2 cool in lab air

Recorded by: *Dustin Wall*

Date: 8-24-07

Verified by:

Date

Thermally Aged Procedure

Quantity/Specimens = 9-7

OVEN= Lindberg Model # 51333 SN# 909172

OVEN SETPOINT= 810°C

OVEN TEMPERATURE= 819.7°C

Measurement taken with OMEGA MICROPROCESSOR THERMOMETER MODEL# HH22

Thermocouple SN# T-94140 CAL= 4/24/07 DUE= 10/26/07
SN# 329 CAL= 7/3/07 DUE= 2/3/08

AMOUNT OF TIME = 3 hrs

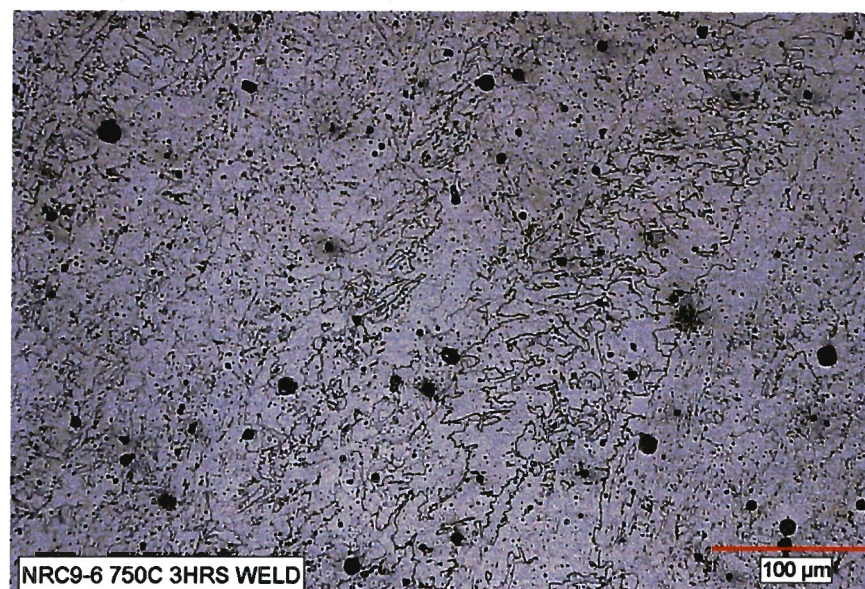
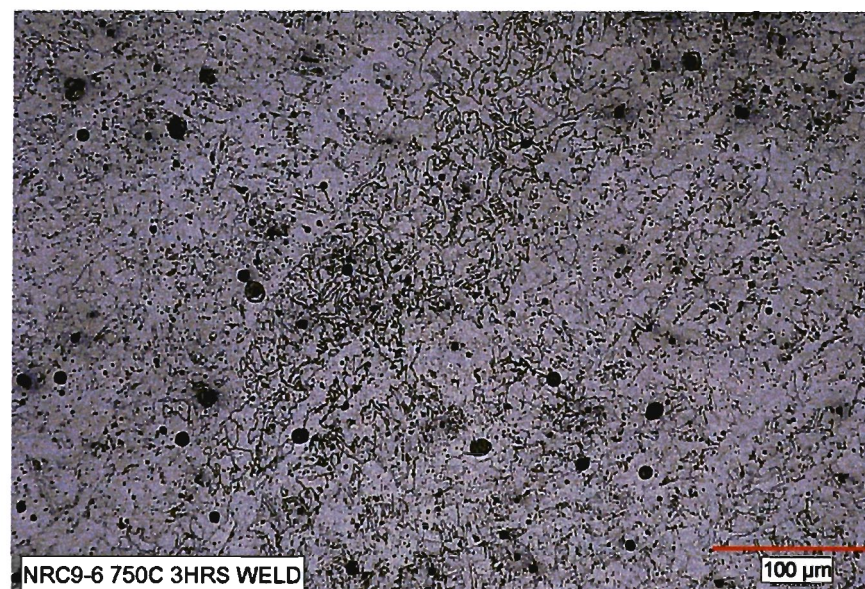
DETAILS=
8:36 Put specimen 9-7 in oven for 6 min to get to temp
8:42 set timer for 3 hrs
11:42 took specimen 9-7 out of oven and let cool in lab air

Recorded by: *[Signature]*

Date: 10/5/07

Verified by:

Date



Recorded by:

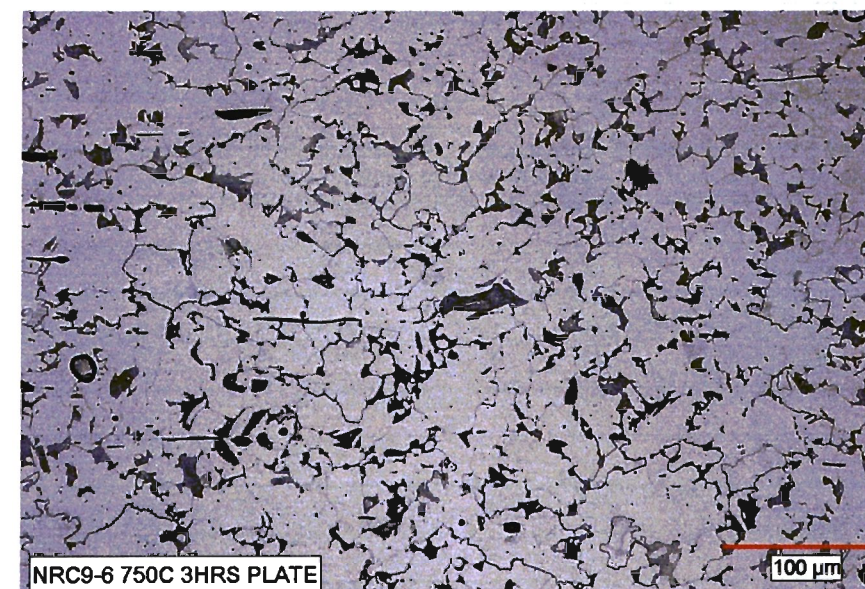
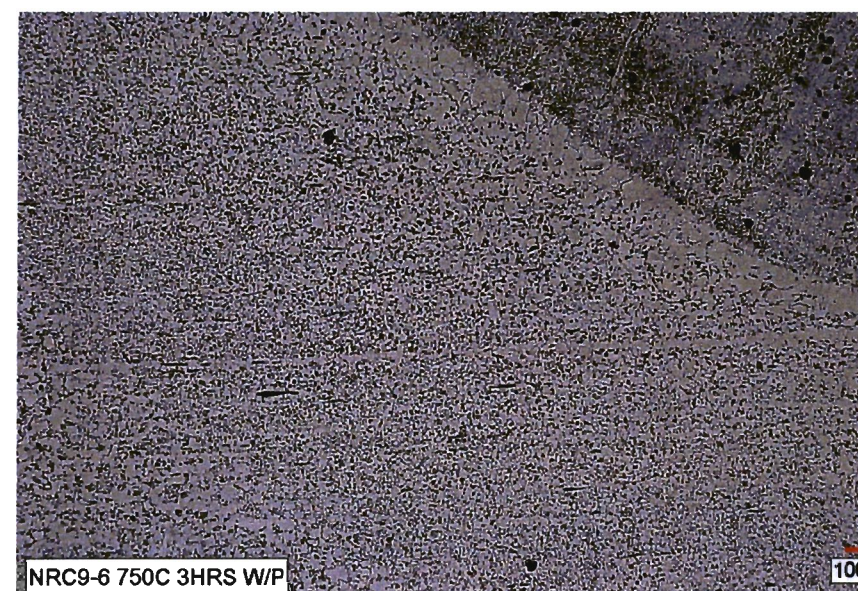
Date

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Date

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10/5/07



Recorded by:

Date

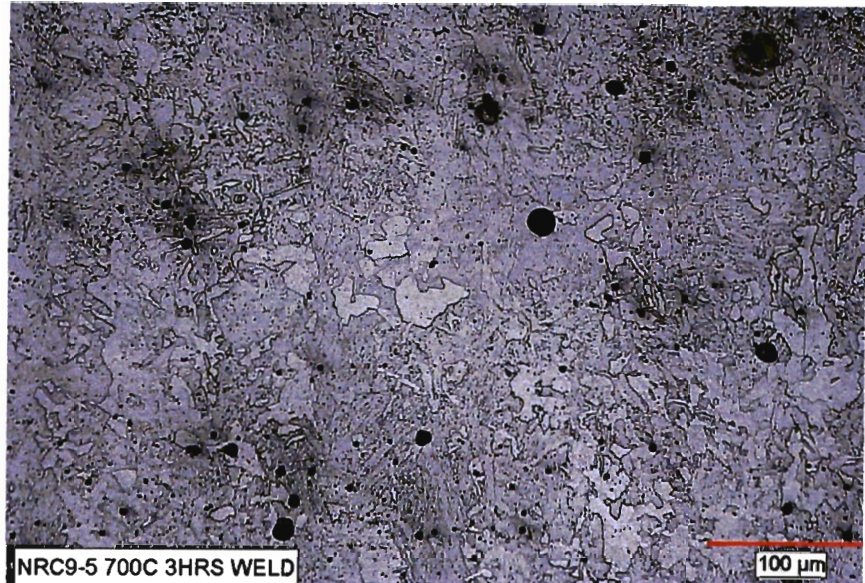
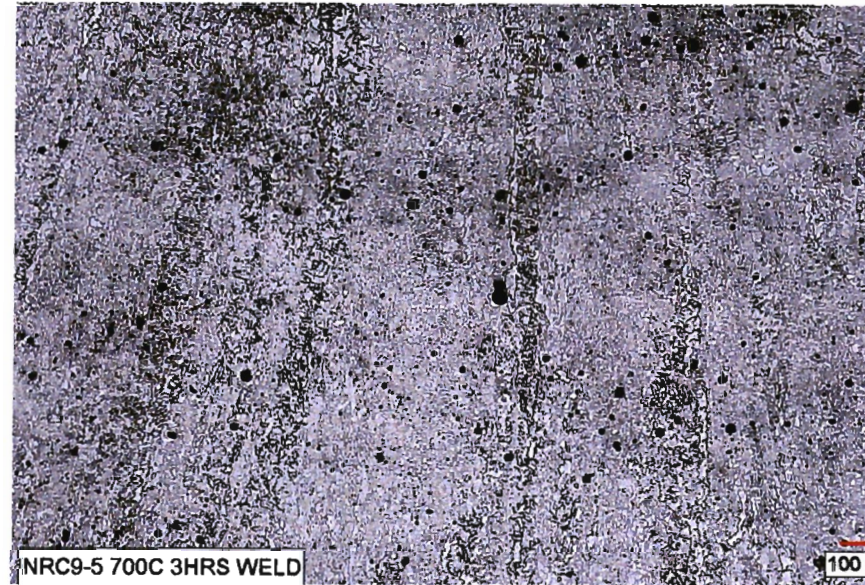
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Date

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10/5/07

[Signature]

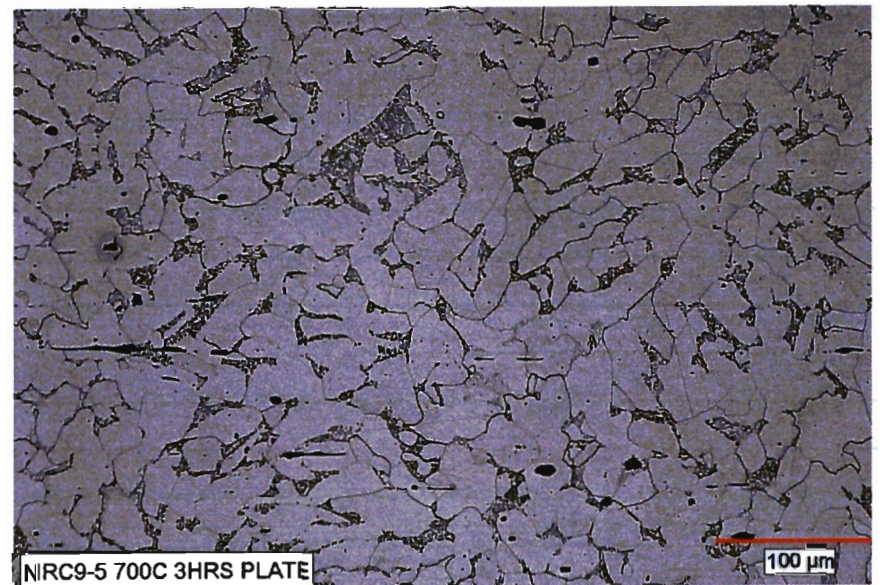
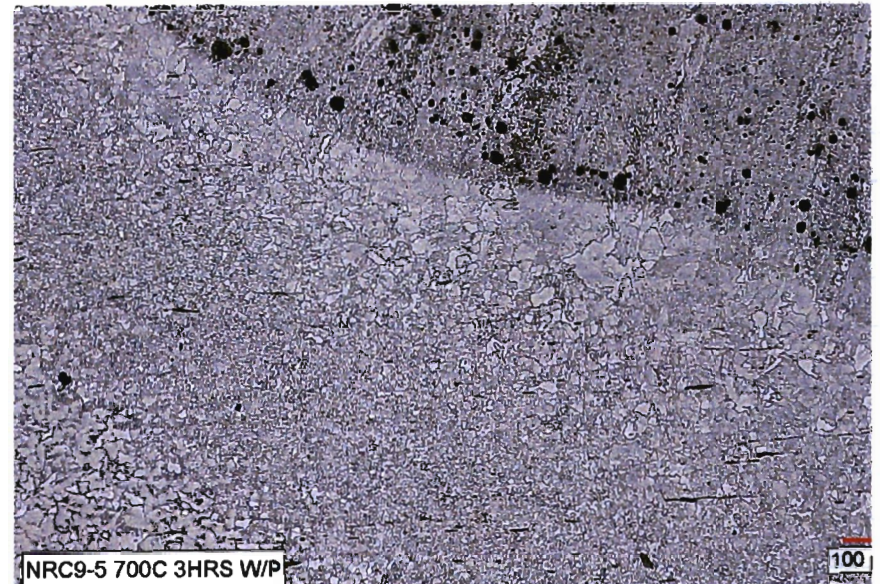


Recorded by: *[Signature]*

Date: 10/5/07

Verified by: _____

Date _____

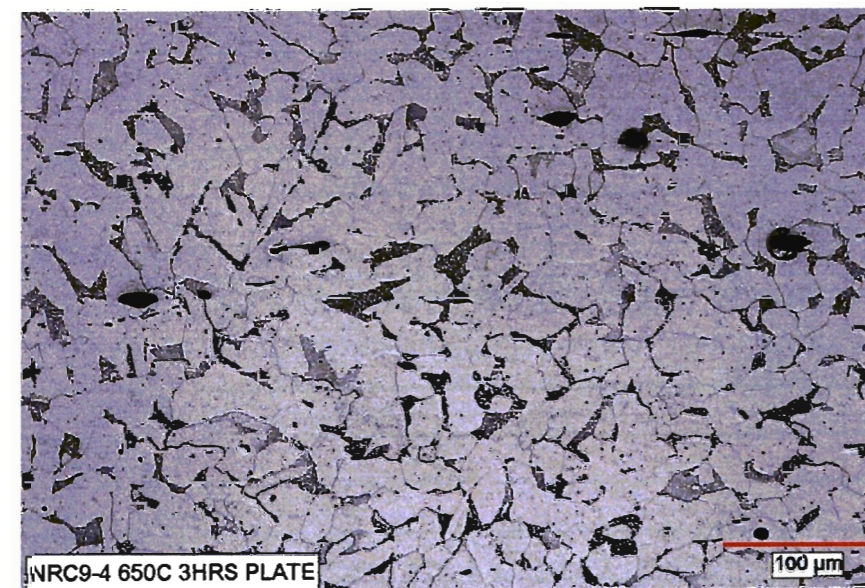
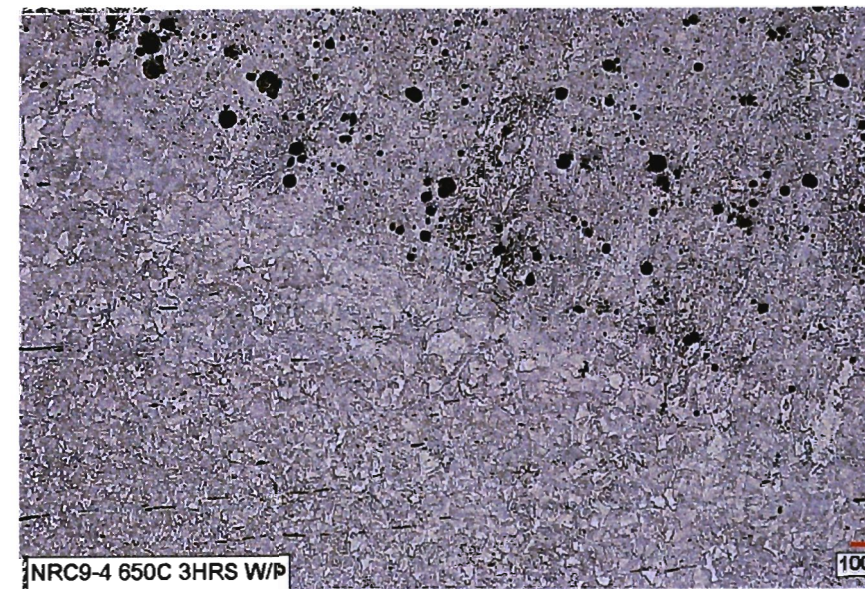
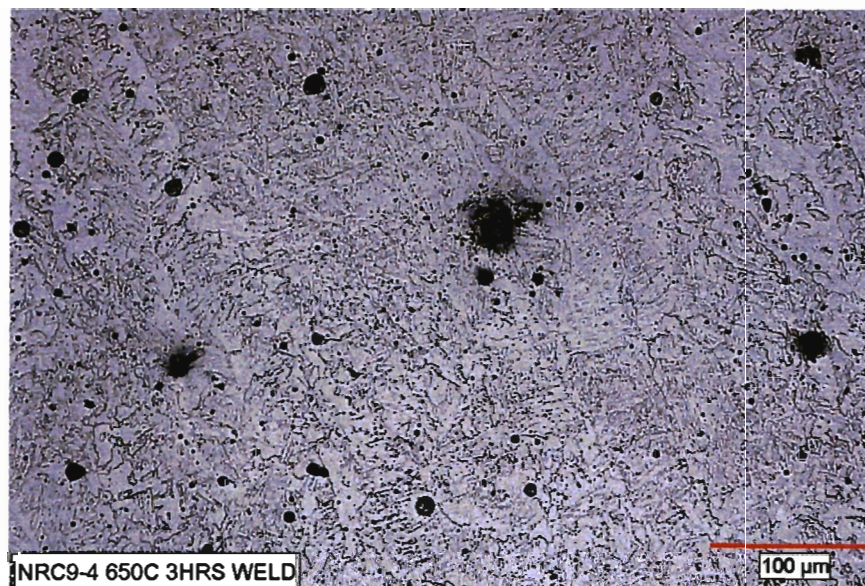
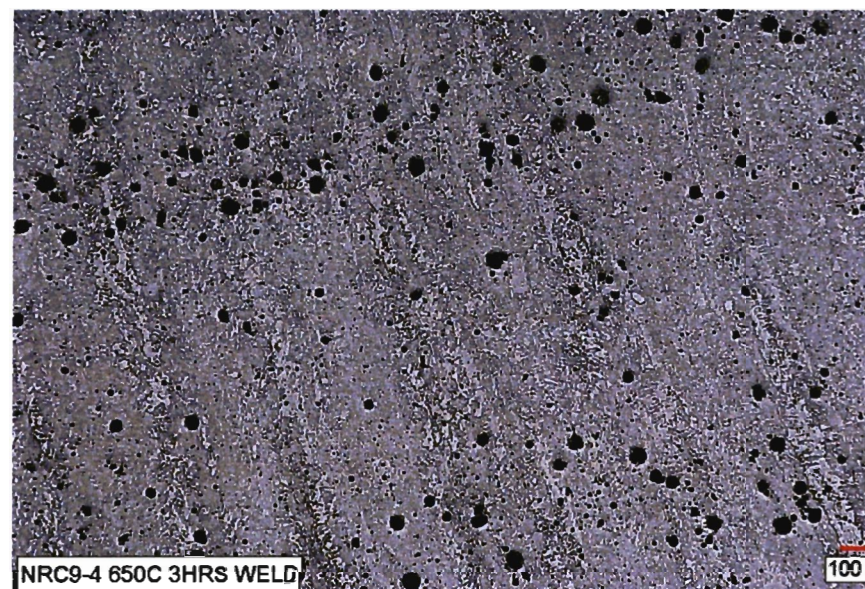


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Date _____



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Date: 10/5/07

Verified by: *[Signature]*

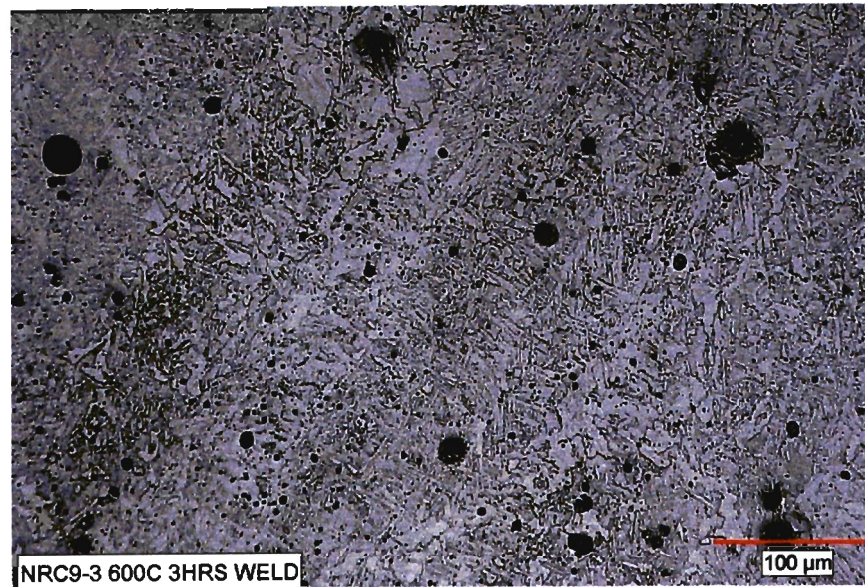
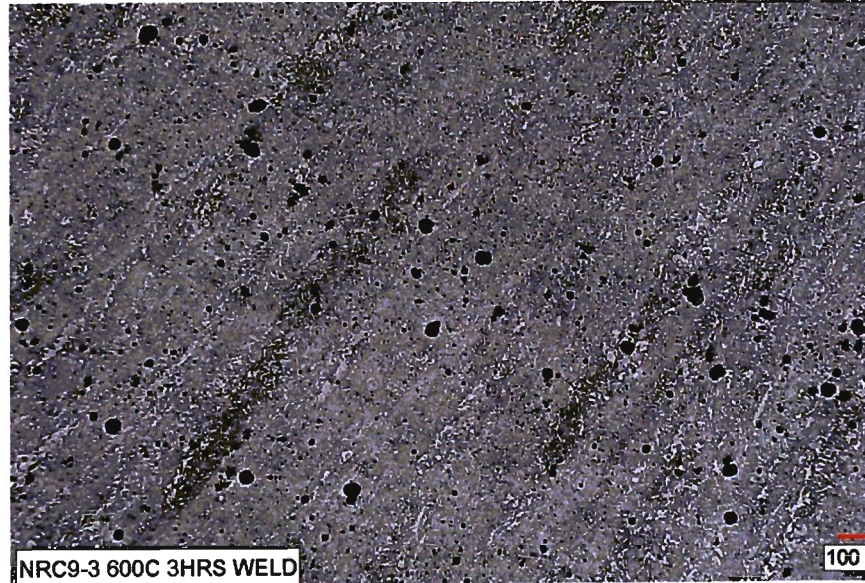
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Date: 10/5/07

Verified by: *[Signature]*

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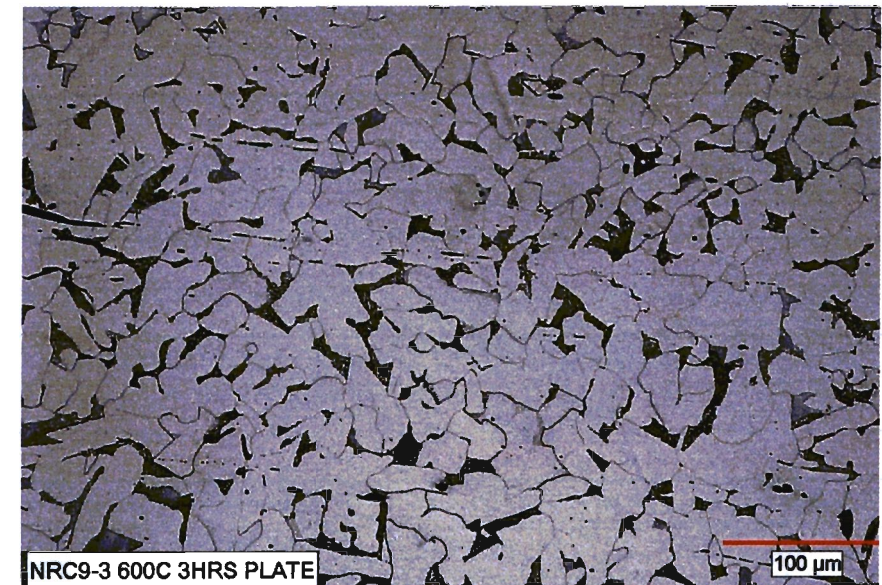
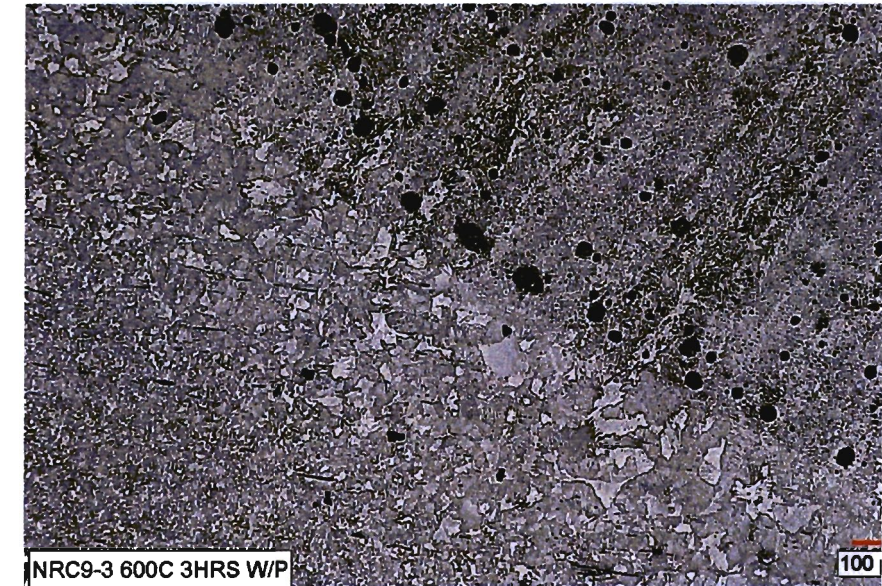


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Date: 10/5/07

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Date

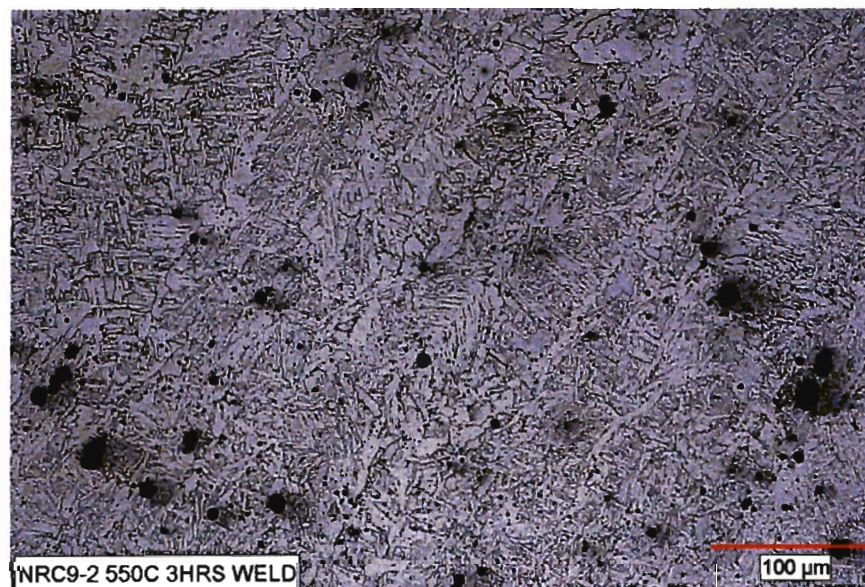
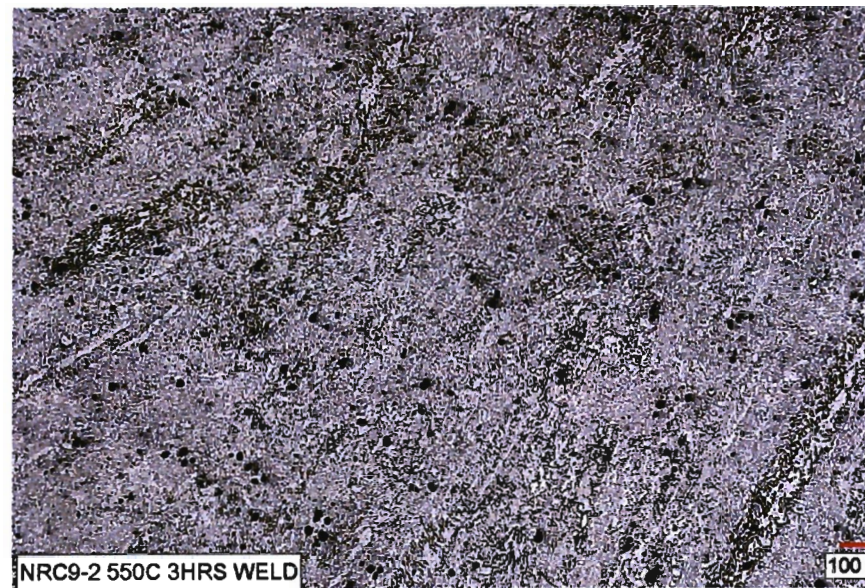


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Date: 10/5/07

Verified by:

Date

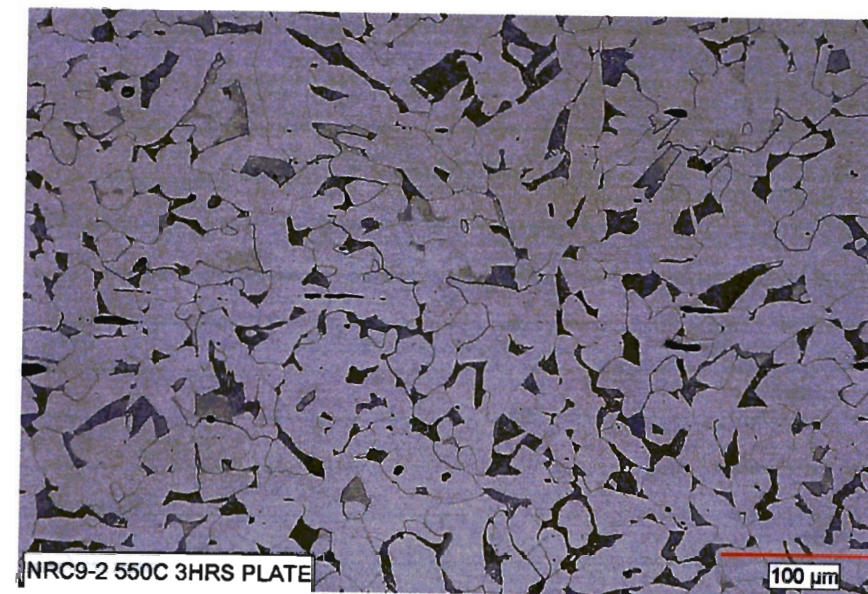
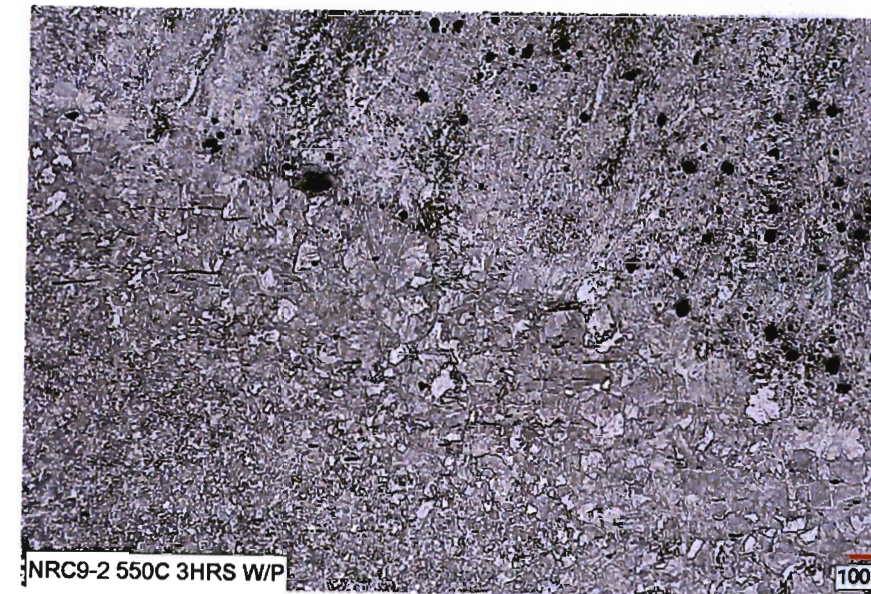


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Date

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Date



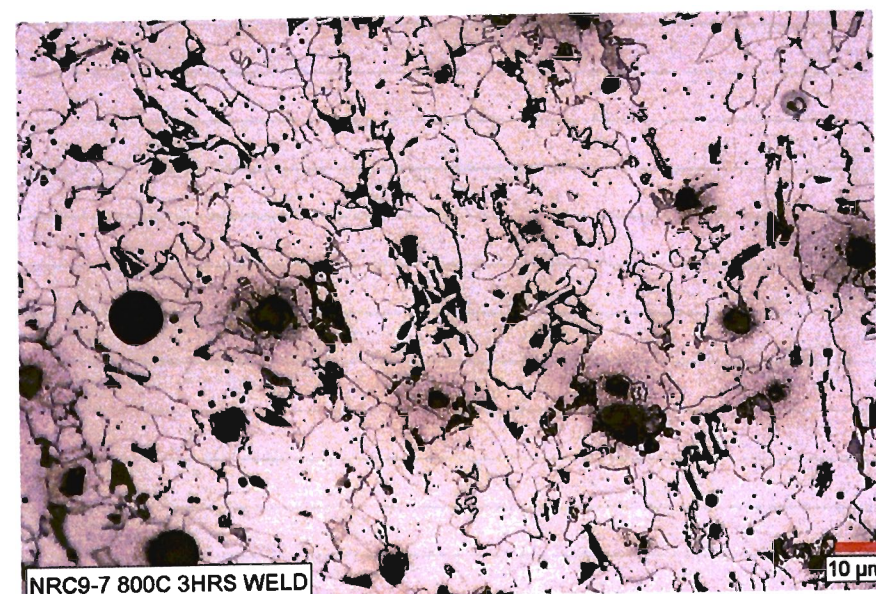
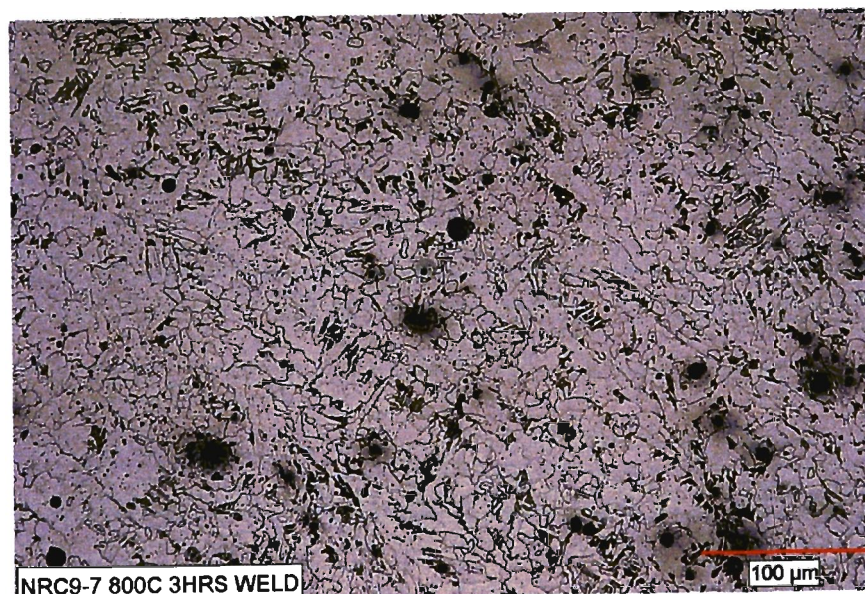
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Date

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Date

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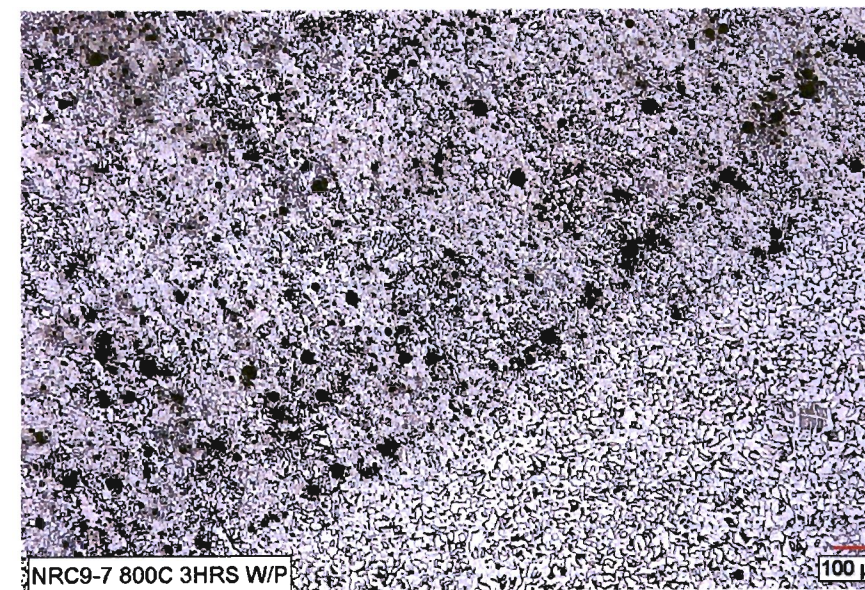


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Date: 10/5/07

Verified by: _____

Date: _____



Recorded by: *[Signature]*

Date: 10/5/07

Verified by: _____

Date: _____

Thermally Aged Procedure

Quantity/Specimens = NRC 9-8

OVEN= Lindberg model # 51333 SN# 909172

OVEN SETPOINT= 850°C

OVEN TEMPERATURE= 857.2°C

Measurement taken with OMEGA MICROPROCESSOR THERMOMETER MODEL# HH22

Thermocouple	SN# T-94140	CAL= 4/26/07	DUE= 10/26/07
	SN# 329	CAL= 7/3/07	DUE= 2/3/08

AMOUNT OF TIME = 3 hrs

DETAILS=

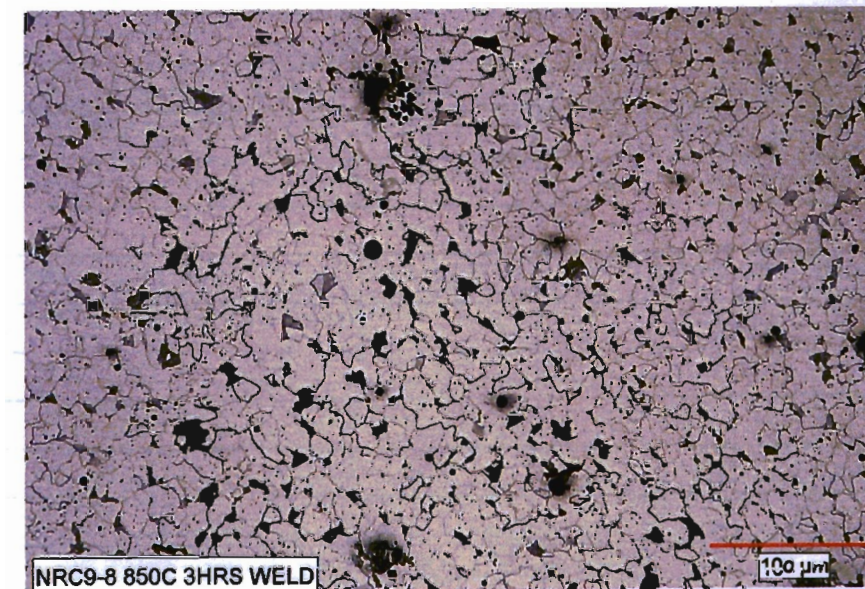
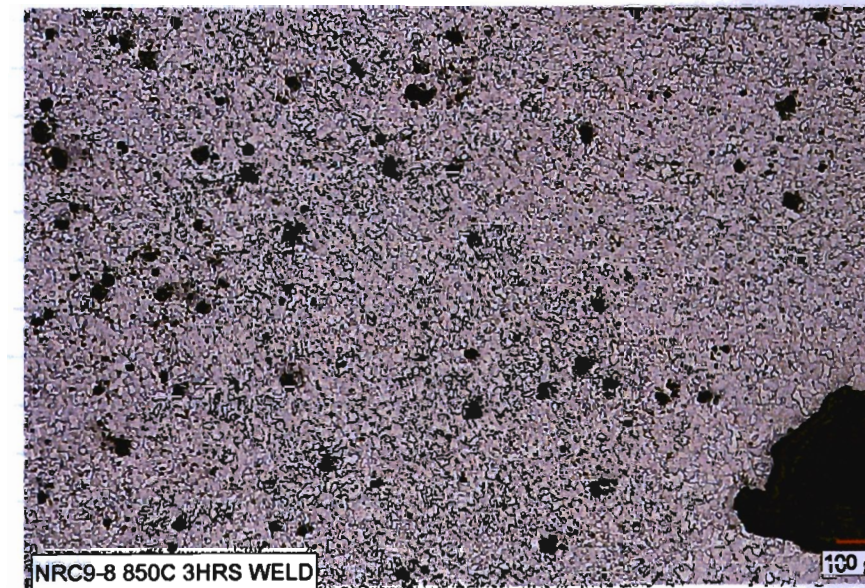
11:54 Put specimen in oven for 6min to get to temp
 12:00 Set timer for 3hrs
 3:00 took specimen 9-8 out of oven and let cool in lab air

Recorded by: *[Signature]*

Date: 10/5/07

Verified by: *[Signature]*

Date: _____

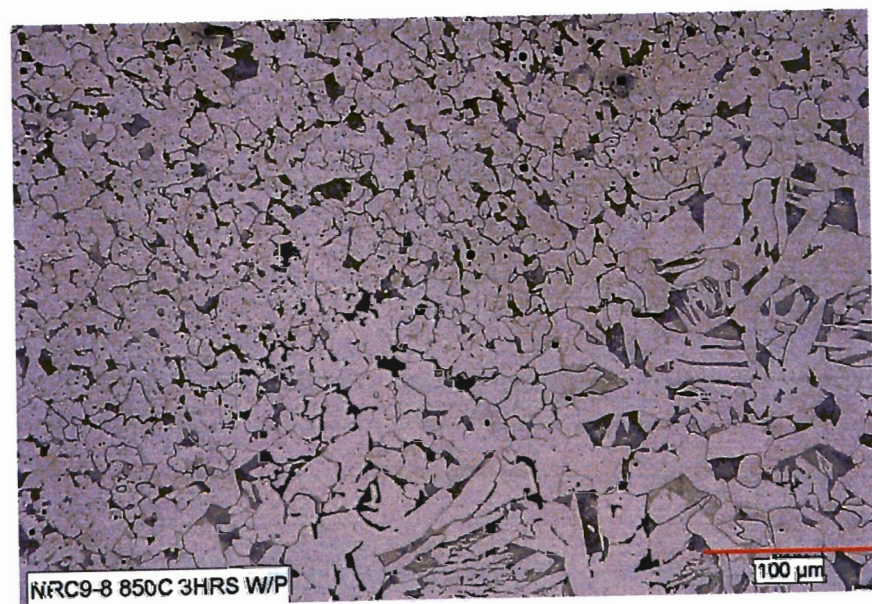
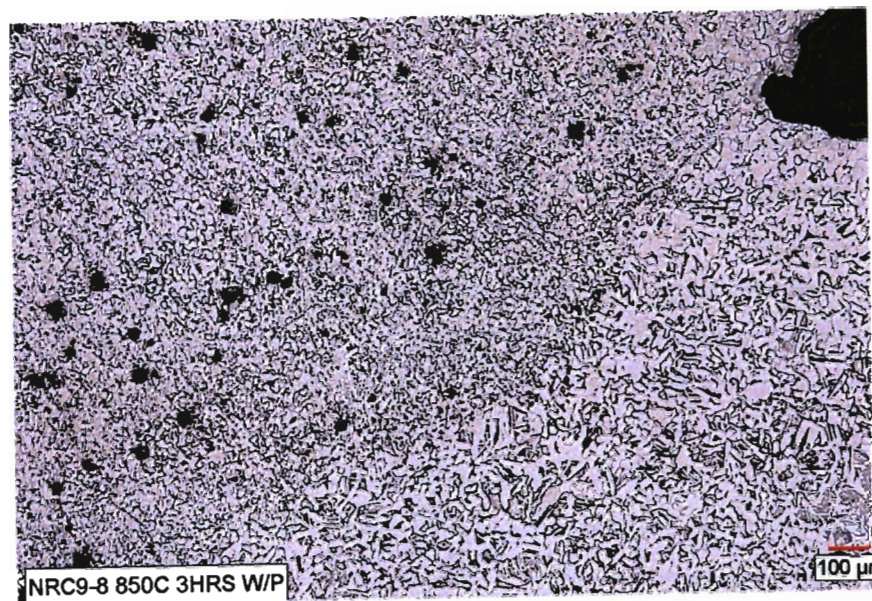


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Date: 10/5/07

Verified by: *[Signature]*

Date: _____



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Date

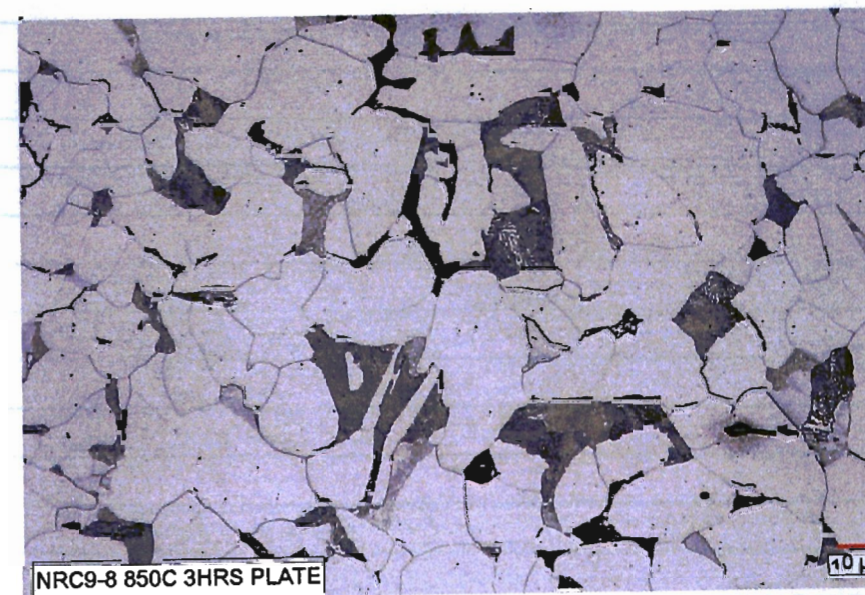
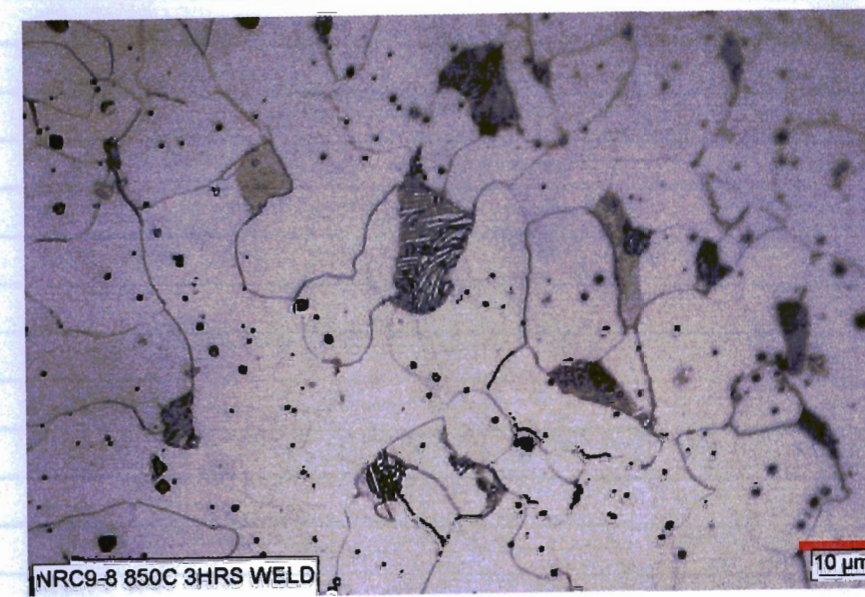
10/5/07

Verified by:

[Signature]

Date

[Signature]



Recorded by:

[Signature]

Date

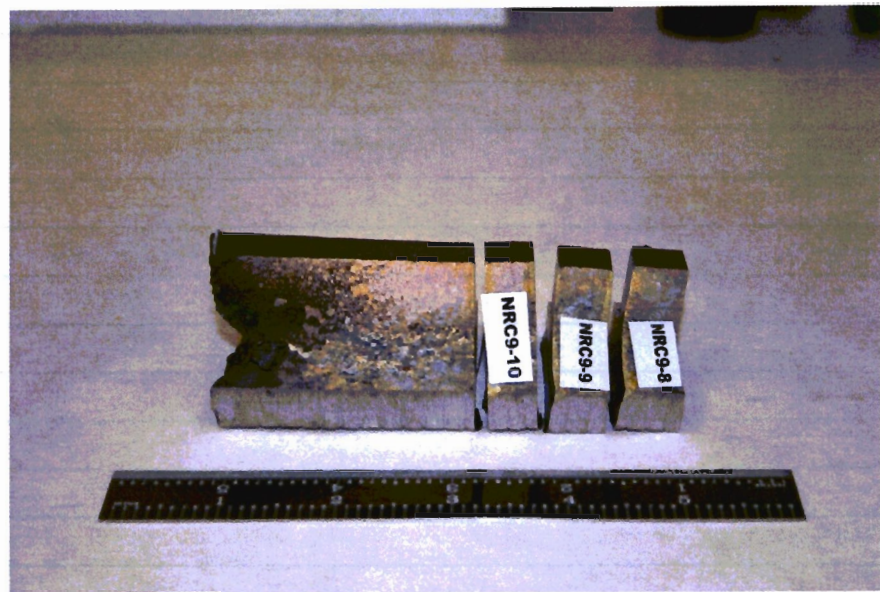
10/5/07

Verified by:

[Signature]

Date

[Signature]



NRC Sample Number	Girder Identification	Thermal Aging Temperature	Time (hours) at Temperature	Cooling
NRC 9-2	PG 12	550 °C	3	Lab air cool
NRC 9-3	PG 12	600 °C	3	Lab air cool
NRC 9-4	PG 12	650 °C	3	Lab air cool
NRC 9-5	PG 12	700 °C	3	Lab air cool
NRC 9-6	PG 12	750 °C	3	Lab air cool
NRC 9-7	PG 12	800 °C	3	Lab air cool
NRC 9-8	PG 12	850 °C	3	Lab air cool
NRC 9-9	PG 12	900 °C	3	Lab air cool
NRC 9-10	PG 12	TBD	TDB	TDB
NRC 9-11	PG 12	TBD	TDB	TDB
NRC 9-12	PG 12	TBD	TDB	TDB

Recorded by: *[Signature]*

Date: 10/5/07

Verified by: *[Signature]*

Date

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CONTINUED IN NOTEBOOK # 907

Recorded by: *[Signature]*

Date: 10/18/07

Verified by: *[Signature]*

Date

Project No. _____

Book No. _____

TITLE _____

CONTINUED IN NOTEBOOK # 907



Recorded by:

A handwritten signature in black ink, appearing to be "Russell D", is written over the "Recorded by:" label.

Date

10/18/07

Verified by:

Date