

START**ENGINEERING CHANGE NOTICE**Page 1 of 71. ECN **193253**Proj.
ECN

2. ECN Category (mark one) Supplemental <input checked="" type="checkbox"/> Direct Revision <input type="checkbox"/> Change ECN <input type="checkbox"/> Temporary <input type="checkbox"/> Standby <input type="checkbox"/> Supersedeure <input type="checkbox"/> Cancel/Void <input type="checkbox"/>	3. Originator's Name, Organization, MSIN, and Telephone No. William E. Davis/16410/S6-70/2-0014		4. Date 03/26/93
	5. Project Title/No./Work Order No. D6T11	6. Bldg./Sys./Fac. No. N/A	7. Impact Level 3EQ
8. Document Numbers Changed by this ECN (includes sheet no. and rev.) WHC-SD-WM-PLN-037, Rev 2		9. Related ECN No(s).	10. Related PO No.

11a. Modification Work <input type="checkbox"/> Yes (fill out Blk. 11b) <input checked="" type="checkbox"/> No (NA Blks. 11b, 11c, 11d)	11b. Work Package No. N/A	11c. Modification Work Complete N/A _____ Cog. Engineer Signature & Date	11d. Restored to Original Condition (Temp. or Standby ECN only) N/A _____ Cog. Engineer Signature & Date
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12. Description of Change

I. Page 7 Change Sampling Site from 207-B to 207-BA
Page 8 Change Sampling Site from 207-B to 207-BA
Page 18 Change Sampling Site from 207-B to 207-BA
Page 14 Change Sampling Site from 207-B to 207-BA

II. Page 14 Correct typos in Table 2. Change 221-BA to 221-BG and 221-BG to 221-BA

III. Page 17 Change method for Nitrogen and Nitrite from 354.1 to 300.0

IV. Page 17 Delete Acidity from Analyte list

V. Page 17 Add statement to Table 3: "Listed Below or in QAPP (WHC 1992b)"

VI. Page 17 Add Nitrate with method 300.0 to Table 3

Impact Level 3EQ was chosen because the changes are Impact level 3 to an engineering document and the changes need to be reviewed by Effluent Emission Monitoring and QA.

13a. Justification (mark one)	Criteria Change <input type="checkbox"/>	Design Improvement <input checked="" type="checkbox"/>	Environmental <input type="checkbox"/>
As-Found <input type="checkbox"/>	Facilitate Const. <input type="checkbox"/>	Const. Error/Omission <input type="checkbox"/>	Design Error/Omission <input type="checkbox"/>

13b. Justification Details

I. Change in sample point to outside a radiation zone for ALARA. Sample point change is <25' from 207-B to 207-BA with no additional sources added to the effluent between the previous and new sample point. II. Type correction in Table 2. III. Method 354.1 is unavailable. Method 300.0 will yield the desired analysis. IV. Since alkalinity is already being analyzed, acidity is a duplication and is being removed. V. Allows methods listed in QAPP to be used. VI. Need Nitrate analysis.

14. Distribution (include name, MSIN, and no. of copies)	RELEASE STAMP
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ENGINEERING CHANGE NOTICE

Page 2 of 7

1. ECN (use no. from pg. 1)

193253

15. Design Verification Required <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	16. Cost Impact <table style="width: 100%;"> <tr> <th style="text-align: center;">ENGINEERING</th> <th style="text-align: center;">CONSTRUCTION</th> </tr> <tr> <td>Additional <input type="checkbox"/> N/A</td> <td>Additional <input type="checkbox"/> N/A</td> </tr> <tr> <td>Savings <input type="checkbox"/></td> <td>Savings <input type="checkbox"/></td> </tr> </table>	ENGINEERING	CONSTRUCTION	Additional <input type="checkbox"/> N/A	Additional <input type="checkbox"/> N/A	Savings <input type="checkbox"/>	Savings <input type="checkbox"/>	17. Schedule Impact (days) Improvement <input type="checkbox"/> N/A Delay <input type="checkbox"/>
ENGINEERING	CONSTRUCTION							
Additional <input type="checkbox"/> N/A	Additional <input type="checkbox"/> N/A							
Savings <input type="checkbox"/>	Savings <input type="checkbox"/>							

18. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 12. Enter the affected document number in Block 19.

SDD/DD	<input type="checkbox"/>	Seismic/Stress Analysis	<input type="checkbox"/>	Tank Calibration Manual	<input type="checkbox"/>
Functional Design Criteria	<input type="checkbox"/>	Stress/Design Report	<input type="checkbox"/>	Health Physics Procedure	<input type="checkbox"/>
Operating Specification	<input type="checkbox"/>	Interface Control Drawing	<input type="checkbox"/>	Spares Multiple Unit Listing	<input type="checkbox"/>
Criticality Specification	<input type="checkbox"/>	Calibration Procedure	<input type="checkbox"/>	Test Procedures/Specification	<input type="checkbox"/>
Conceptual Design Report	<input type="checkbox"/>	Installation Procedure	<input type="checkbox"/>	Component Index	<input type="checkbox"/>
Equipment Spec.	<input type="checkbox"/>	Maintenance Procedure	<input type="checkbox"/>	ASME Coded Item	<input type="checkbox"/>
Const. Spec.	<input type="checkbox"/>	Engineering Procedure	<input type="checkbox"/>	Human Factor Consideration	<input type="checkbox"/>
Procurement Spec.	<input type="checkbox"/>	Operating Instruction	<input type="checkbox"/>	Computer Software	<input type="checkbox"/>
Vendor Information	<input type="checkbox"/>	Operating Procedure	<input type="checkbox"/>	Electric Circuit Schedule	<input type="checkbox"/>
OM Manual	<input type="checkbox"/>	Operational Safety Requirement	<input type="checkbox"/>	ICRS Procedure	<input type="checkbox"/>
FSAR/SAR	<input type="checkbox"/>	IEFD Drawing	<input type="checkbox"/>	Process Control Manual/Plan	<input type="checkbox"/>
Safety Equipment List	<input type="checkbox"/>	Cell Arrangement Drawing	<input type="checkbox"/>	Process Flow Chart	<input type="checkbox"/>
Radiation Work Permit	<input type="checkbox"/>	Essential Material Specification	<input type="checkbox"/>	Purchase Requisition	<input type="checkbox"/>
Environmental Impact Statement	<input type="checkbox"/>	Fac. Proc. Samp. Schedule	<input type="checkbox"/>	None	<input checked="" type="checkbox"/>
Environmental Report	<input type="checkbox"/>	Inspection Plan	<input type="checkbox"/>		<input type="checkbox"/>
Environmental Permit	<input type="checkbox"/>	Inventory Adjustment Request	<input type="checkbox"/>		<input type="checkbox"/>

19. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number Revision
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20. Approvals

Signature	Date	Signature	Date
OPERATIONS AND ENGINEERING		ARCHITECT-ENGINEER	
Cog Engineer <i>[Signature]</i>	<u>3/26/93</u>	PE	_____
Cog. Mgr <i>[Signature]</i>	<u>3/26/93</u>	QA	_____
QA D. D. McAfee <i>[Signature]</i>	<u>3/31/93</u>	Safety	_____
Safety N/A	_____	Design	_____
Security N/A	_____	Environ.	_____
Environ. <i>[Signature]</i> WED 3/24/93	<u>3-29-93</u>	Other	_____
Projects/Programs N/A	_____		_____
Tank Waste Remediation System N/A	_____		_____
Facilities Operations N/A	_____	DEPARTMENT OF ENERGY	_____
Restoration & Remediation N/A	_____	Signature or Letter No.	_____
Operations & Support Services N/A	_____		_____
IRM N/A	_____	ADDITIONAL	_____
Other Informal Review <i>[Signature]</i>	<u>3-31-93</u>		_____
M. S. Hendrix <i>[Signature]</i>	<u>3/29/93</u>		_____
B. R. Speer <i>[Signature]</i>	<u>3/29/93 WED</u>		_____

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Figure 2. CBC Stream Flow Schematic

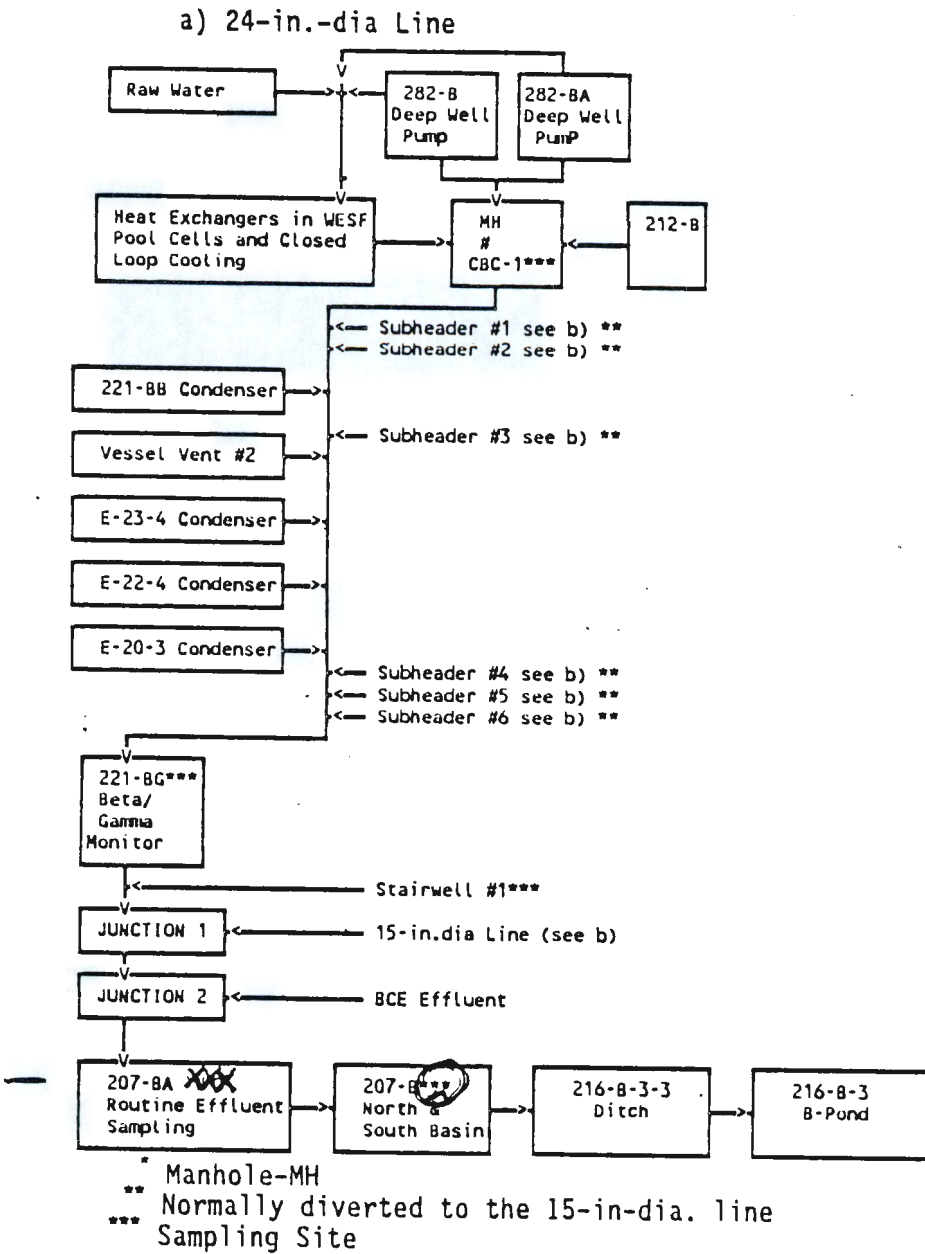
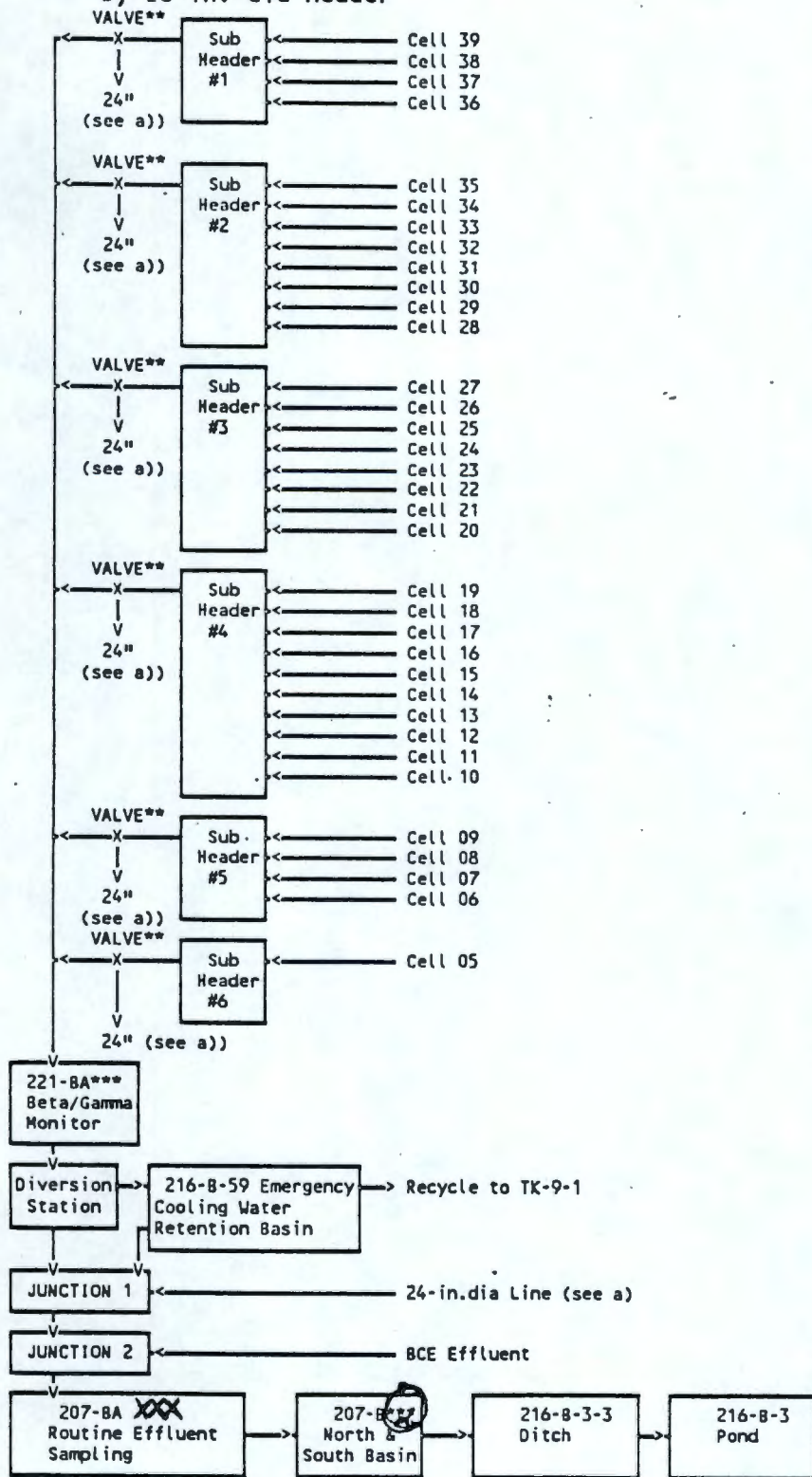


Figure 2 continued on next page

b) 15-in.-dia Header



** Normally diverted to 15-in-dia. line
 *** Sampling Site

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Office of Sampling Management will:

- o Identify and approve the contracted laboratory to perform analysis of samples.
- o Monitor the contracted laboratory for quality performance.
- o Act as interface between the Sampling Task Leader and the contracted laboratory.
- o Verify that all laboratory results are received.
- o Validate contracted laboratory data packages.

Sampling and Mobile Laboratories will:

- o Provide one sampler with a WHC Certificate of Qualification from the Sampling and Mobile Laboratories Organization. The certified sampler shall direct liquid effluent characterization sampling, packaging, and shipping.
- o Prepare the Plant liquid effluent characterization sampling procedure.
- o Document sampling activities in a log book.
- o Transport liquid effluent characterization samples to laboratory or shipping center.
- o Initiate "Chain-of-Custody" documentation for liquid effluent characterization samples.
- o Package liquid effluent characterization samples for shipping.
- o Ensure copies of field logs and other sampling data sheets are filed with Sampling Task Leader.

D. SAMPLING LOCATION AND FREQUENCY

This section describes sampling location and frequency of characterization sampling for the CBC effluent stream.

D.1 Sampling Location

The characterization grab sampling of the combined BCE and CBC effluent will be performed at the ~~207-B Basin~~, since this location is downstream from all contributors. In addition, two samples are necessary to document the 24-in-dia. effluent and the 15-in-dia. effluent. A sample representative of the 24-in-dia. effluent will be taken at 221-BG or manhole CBC-1 (see Figure 1, page 4, and appendix A, page 23-26) while a sample taken at 221-BA will represent the 15-in-dia. effluent. The alternate sampling location for the 24-in-dia. effluent at manhole CBC-1 can be used only when the condensers E-23-4, E-22-4, E-20-3 and the condenser in 221-BB are not operating. Since a sampling position of the combined 24-in-dia. line does not exist downstream of where Stairwell #1 effluent enters the line, a sample will be taken of the Stairwell #1 steam condensate where it enters the drain. However, if no steam condensate is present during the time of sample collection, the stairwell #1 sample will be omitted.

The raw water background characterization grab sample will represent the input raw water stream to B Plant. This characterization grab sample (shown in Table 2) will be taken at 294-B. Since characterization sampling will also be performed for the BCE effluent stream (WHC 1992a) at the same time as the CBC sampling, the raw water background characterization grab sample will represent both streams.

Table 2. Characterization Sampling Locations

<u>Sample</u>	<u>Sample Location</u>	<u>Description</u>
1.	207-BA	Combined CBC and BCE effluent stream*
2.*	294-B	Raw Water Supply to B Plant
3.	221-B R or CBC-1	24-in-dia. effluent
4.	221-B G A	15-in-dia. effluent
5.**	Stairwell #1	Steam Condensate in Stairwell #1

* The BCE samples specified in B Plant Chemical Sewer Sampling and Analysis Plan (WHC 1992a) will be taken at the same time as CBC samples.

** Flowrate from steam heating is less than 0.1 gpm during winter and essentially 0 gpm in summer.

D.2 Frequency

The set of characterization samples listed in Table 2 will be taken to characterize the effluent stream. Additional characterization samples will be collected, as determined by the CBC cognizant engineer, to obtain data representative of changes in the process operational conditions.

Following the initial characterization of the CBC stream, the additional characterization samples of the inflow raw water at 294-B, at Stairwell #1, 221-BA, and 221-BG will not be performed unless dilution of a source stream is suspected. The characterization sample characterizing the CBC and BCE combined effluent will be taken at the same time twice annually. This twice annual sampling will continue for the BCE and CBC until the effluents are separated in 1995.

Characterization sampling will be initiated within 3 months after the regulators (Environmental Protection Agency/Washington State Department of Ecology) approve this plan.

Weekly routine samples to document total beta, total alpha, and pH of the combined CBC and BCE effluent are taken at 207-BA by a flow proportional sampler.

G. SAMPLE HANDLING AND ANALYSIS

Characterization samples will be initially analyzed for analytes listed in 40 CFR 264 Appendix IX (EPA 1991) using analytical method, precision and accuracy listed in the QAPP Appendix A, Table A-1 (WHC 1992b). The list of analytes are noted in Table 3.

Table 3. Analytical Methods

Analyte	Method of Analysis
Sulfides	9030
Semivolatile Organics	8270
Volatile Organics	8240
Chlorinated herbicides	8150
Organophosphorus Pesticides	8140
Organochlorine Pesticides and PCBs	8080
Tin	7870
Thallium	7841
Selenium	7740
Mercury	7470
Lead	7421
Chromium	7196
Arsenic	7060
Antimony	7041
Inductively Coupled Plasma	6010
Phenolics	420.1/9065/9066/9067
Total Organic Carbon	415.2/9060
Oil and Grease, total recoverable	413.2/9070/9071
Chemical Oxygen Demand	410.1
Biochemical Oxygen Demand	405.1
Sulfate	375.4
Phosphorus, all forms	365.2
Nitrogen and Nitrite	351.1
Nitrogen, Nitrate, Nitrite	353.3
Nitrate	300.0
Ammonia	350.1
Fluoride	300.0
Total Cyanide	335.2
Chloride	300.0
Bromide	300.0
Alkalinity	310.1/310.2
Acidity	305.2

is listed below on
in QAPP
(WHC 1992b)

← 300.0 →

Complete for all Types of Release

<input type="checkbox"/> Speech or Presentation <input type="checkbox"/> Full Paper <input type="checkbox"/> Summary <input type="checkbox"/> Abstract <input type="checkbox"/> Visual Aid <input type="checkbox"/> Speakers Bureau <input type="checkbox"/> Poster Session <input type="checkbox"/> Videotape	(Check only one suffix)	<input type="checkbox"/> Reference <input checked="" type="checkbox"/> Technical Report <input type="checkbox"/> Thesis or Dissertation <input type="checkbox"/> Manual <input type="checkbox"/> Brochure/Flier <input type="checkbox"/> Software/Database <input type="checkbox"/> Controlled Document <input type="checkbox"/> Other	ID Number (include revision, volume, etc.) WHC SD WM PLN 037 Rev.2 List attachments. ECN 193253 Date Release Required <p style="text-align: center;">4/12/93</p>
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Title B Plant Cooling Water Sampling and Analysis Plan	Unclassified Category UC-	Impact Level 3E Q
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New or novel (patentable) subject matter? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If "Yes", has disclosure been submitted by WHC or other company? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Disclosure No(s).	Information received from others in confidence, such as proprietary data, trade secrets, and/or inventions? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Identify)
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Copyrights? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If "Yes", has written permission been granted? <input type="checkbox"/> No <input type="checkbox"/> Yes (Attach Permission)	Trademarks? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Identify)
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Complete for Speech or Presentation			
Title of Conference or Meeting	Group or Society Sponsoring		
Date(s) of Conference or Meeting	City/State	Will proceedings be published?	<input type="checkbox"/> Yes <input type="checkbox"/> No
		Will material be handed out?	<input type="checkbox"/> Yes <input type="checkbox"/> No

Title of Journal

CHECKLIST FOR SIGNATORIES

Review Required per WHC-CM-3-4	Yes	No	Reviewer - Signature Indicates Approval
			Name (printed) Signature Date
Classification/Unclassified Controlled Nuclear Information	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Patent - General Counsel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	OGC Memo 2/4/93
Legal - General Counsel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	OGC Memo 2/4/93
Applied Technology/Export Controlled Information or International Program	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
WHC Program/Project	<input checked="" type="checkbox"/>	<input type="checkbox"/>	D. R. Speer RI-48 <i>D. R. Speer</i> 4-19-93
Communications	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
RL Program/Project	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Publication Services	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MR WARCHICK <i>MR WARCHICK</i> 4/19/93
Other Program/Project	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Information conforms to all applicable requirements. The above information is certified to be correct.

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