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# Memorandum

EC 23 1996  
 76 (Bottrell:3-7251)

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Harder, P	X	X
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Stover, J	X	X
Hill, G	X	
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ance of Department of Energy "Statistical and Cost Benefit Enhancements  
 The Data Quality Objectives Process for Characterization Decisions"  
 E/EM-0316)  
 tribution

cost of characterization comprises a sizeable portion of the Department  
 Energy's (DOE) Environmental Management (EM) program budget. The Data  
 Quality Objectives (DQO) process has been instituted by DOE to ensure the  
 investment in characterization adds net value to each project. Existing  
 guidance issued by the US Environmental Protection Agency (EPA QA/G4,  
 September 1994) approaches the formalization of the DQO process by use of  
 statistical hypothesis testing. The attached DOE report extends the tool  
 for the DQO process to include statistical decision theory. Decision  
 theory often suggests actions with much lower characterization requirements.  
 This approach can help identify EM's urgent needs based on total program  
 costs and increase the resources available to support defensible actions.

The report discusses the application of decision theory logic to determine  
 the most effective actions to take for environmental remediation and to decide  
 whether additional environmental sampling and analysis is justified. The  
 statistics behind decision theory have been incorporated into a personal  
 computer based program call SAMPLAN, giving project planners a powerful, yet  
 simple to use, planning tool.

The Environmental Management Program offers training and technical  
 assistance to field sites in applying the DQO process and using related  
 statistical tools, such as SAMPLAN, to project planning. For more  
 information, please contact Mr. David Bottrell at 301-903-7251 of my staff.

*J. Fire*  
 Willis W. Bixby  
 Deputy Assistant Secretary for  
 Site Operations



NOTES  
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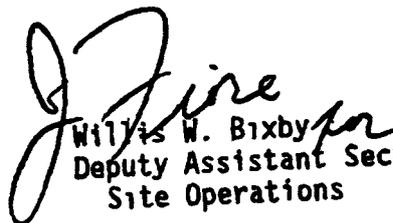
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SUBJECT Issuance of Department of Energy "Statistical and Cost-Benefit Enhancements to The Data Quality Objectives Process for Characterization Decisions" (DOE/EM-0316)  
TO Distribution

The cost of characterization comprises a sizeable portion of the Department of Energy's (DOE) Environmental Management (EM) program budget. The Data Quality Objectives (DQO) process has been instituted at DOE to ensure the investment in characterization adds net value to each EM project. Existing guidance issued by the US Environmental Protection Agency (EPA QA/G4, September 1994) approaches the formalization of the DQO process by use of statistical hypothesis testing. The attached DOE report extends the tool kit for the DQO process to include statistical decision theory. Decision theory often suggests actions with much lower characterization requirements. This approach can help identify EM's urgent needs based on total program costs and increase the resources available to support defensible actions.

This report discusses the application of decision theory logic to determine cost-effective actions to take for environmental remediation and to decide whether additional environmental sampling and analysis is justified. The statistics behind decision theory have been incorporated into a personal computer based program call SAMPLAN, giving project planners a powerful, yet simple to use, planning tool.

The Characterization Management Program offers training and technical assistance to field sites in applying the DQO process and using related statistical tools, such as SAMPLAN, to project planning. For more information, please contact Mr. David Bottrell at 301-903-7251 of my staff.

  
Willis W. Bixby  
Deputy Assistant Secretary for  
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