



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 10 2011

ASSISTANT ADMINISTRATOR
FOR ENFORCEMENT AND
COMPLIANCE ASSURANCE

MEMORANDUM

SUBJECT: ECHO Data Quality Audit - Phase 2 Results: EPA Could Achieve Data Quality Rate With Additional Improvements, Report No. 10-P-0230

From: Cynthia Giles
Assistant Administrator

To: Arthur A. Elkins, Jr.
Inspector General

This memorandum contains the Office of Enforcement and Compliance Assurance (OECA) response to the final report titled, "ECHO Data Quality Audit -Phase 2 Results: EPA Could Achieve Data Quality Rate With Additional Improvements", dated September 22, 2010. The response includes a corrective action plan for agreed upon actions, including planned milestone dates.

Report Recommendation 1:

- **Establish a management control structure to facilitate PCS to ICIS-NPDES conversion. The management control structure should support plans to meet milestone dates.**

OECA Response:

OECA agrees with the report's attention to strong management controls to ensure a continued quality conversion from PCS to ICIS-NPDES. OECA has strong management controls in place to facilitate the PCS to ICIS-NPDES conversion. There are three control structures used for this purpose including an Integrated Project Team using established best practices for IT project management, the Environmental Information Exchange Network (EN) governance structure which controls electronic exchange of data, and the permanent EPA management team of the Office of Compliance. In addition there are state-specific Data Migration Workgroups which are formed in advance of each state's conversion to work through data migration issues and ensure readiness for the conversion process.



Recycled/Recyclable
Printed with Soy/Canola Ink on paper that
contains at least 50% recycled fiber

The ICIS-NPDES Batch Integrated Project Team (IPT) was formed to bring together management and staff with the necessary business and technology skills from EPA (OECA, OEI, and EPA Regions) and our state partners through the Environmental Council of States to implement the successful transition from PCS to ICIS-NPDES. The IPT serves as the primary management control structure for the conversion. The members oversee development processes and software, including finalization and implementation of the NPDES schemas for the electronic flow of data from state NPDES systems to ICIS-NPDES. This IPT was initially convened in March of 2007 to move forward the electronic submission of Discharge Monitoring Report data from state systems to ICIS-NPDES. This was successfully completed in May of 2008. The ICIS-NPDES Batch IPT was reconvened in October of 2009 to move forward with the electronic transmittal of the remaining NPDES data families and complete the conversion of the remaining 22 states to ICIS. There are currently 38 states and 6 regions participating on the IPT. Part of the responsibility of the IPT is to set project milestones and regularly review them. To date, the work of the project remains on schedule. Pilot state(s) are drawn from the IPT (as volunteers) to test out the schemas and migrate to ICIS-NPDES per the agreed upon schedule.

The governance structure of the Environmental Information Exchange Network (EN) requires that all software schema to be used for flowing data across the EN, including the products developed under the leadership of the IPT, be reviewed and approved by the Network Technology Group (NTG) which is made up of information technology specialists that have expertise in data conversion, exchange, and publishing. The NTG operates under the auspices of the Network Operations Board (NOB), a group that is responsible for the day-to-day operations of the EN and its operational policies and procedures. Any issues that are not resolved at the NOB level may be elevated to the higher Exchange Network Leadership Council. All three groups have EPA, state, and tribal partners and decisions are made collaboratively.

Within the Office of Compliance, the activities of the IPT and project milestones are reported to Office of Compliance executives at biweekly management meetings. Both the Division Director and the Office Director and their deputies review accomplishments, address issues, and ensure that funding and other resources are available to assist states with conversion of their data.

Finally, an ICIS-NPDES Data Migration Workgroup is initiated each time there is a group of states scheduled to migrate from legacy PCS to ICIS-NPDES. Participants include management and staff from each migrating state, each state's respective region, and OECA. Work must be done by each migrating state to ready their data in legacy PCS for the migration to ICIS-NPDES. The purpose of holding the workgroup is to walk the state and regional participants through the data migration process, explain the data differences between legacy PCS and ICIS-NPDES, walk through the mapping rules for data being migrated from legacy PCS to ICIS-NPDES, review test data migration results from each test data migration run, and answer questions concerning the process, the data and ICIS-NPDES. Work groups typically last a year and the status of activities is reported to the IPT and the management chain within the Office of Compliance.

Report Recommendation 2:

- ***Insert language that requires the use of the Environmental Information Exchange Network in the National Program Manager (NPM) Guidance to assist with PCS to ICIS-NPDES conversion for FY 2012***

OECA Response:

OECA currently has guidance language regarding the use of the Environmental Information Exchange Network in its “FY-2011 OECA National Program Manager (NPM) Guidance” dated April 30, 2010 that reads:

“Implement the use of NetDMR or other e-DMR tools for the electronic transfer of Discharge Monitoring Reports (DMR) to ICIS-NPDES, supported by use of the National Environmental Information Exchange Network (Exchange Network), by all of their NPDES permitted facilities. Administrator Jackson, in her July 7, 2009 memorandum, “Achieving the Promise of the National Environmental Information Exchange Network,” requested cross-Agency commitment to make the Network the preferred way EPA, States, Tribes, and others share and exchange data while supporting an aggressive timetable to phase out other data submission and exchange methods. EPA Regions need to demonstrate leadership in implementing this strategic vision for the Agency.” (See page 29.)

OECA commits to continuing to provide this information in future National Program Manager Guidance documents.

Report Recommendation 3:

- ***Gather key leading data quality practices used by the states and share these practices with all states.***

OECA Response:

OECA agrees that sharing of best practices across the states will improve the overall quality of information available to EPA and the American public. OECA is committed to assuring data quality. It will, as permitted under the Paperwork Reduction Act, seek to identify a few states that are willing to share and post their quality control and quality assurance methods for achieving high quality enforcement and compliance information. OECA also commits to using National Meetings as forums for panel and other discussions to allow states to share their data quality best practices.

In addition, there are a number of existing examples of states sharing and using data quality practices for both ICIS and PCS. In 2009, at the ICIS National Meeting, regions and states shared their Discharge Monitoring Report (DMR) data quality practices. States also shared their Quality Assurance and Quality Control (QA/QC) processes as they related to the

standard reports available in ICIS. These processes involved quality control of data for limits, overdue schedules, and violations. The Quarterly Non-Compliance Report is also used by states as a data quality tool. On occasion, data quality issues are addressed on the ICIS monthly user calls.

For PCS, states use the "Dummy" audit capability to review data and reject transactions before transferring the data into the system. They follow up by reviewing the rejected transactions from the "Live" audit reports.

Report Recommendation 4:

- ***Provide reminders to EPA regional offices and state environmental offices to use the standard Form 2040-0004 for data entry. Where this is not feasible (e.g., for state-specific reporting requirements), EPA should require completely reporting DMR data by using standardized Form 2040-0004 or alternative entry forms. Further, EPA should remind the states of the importance of documenting changes made to data elements after entry into the source systems.***

OECA Response:

OECA agrees with the report that we should strive to better ensure states and regions are well informed on the proper forms and procedures for collecting and submitting data to EPA. OECA will take every available opportunity to remind EPA regional offices and states to use the Standard Form 2040-0004. This will include mechanisms such as the quarterly ICIS newsletter, monthly user calls, and electronic mail messages sent to individuals on the current ICIS list serve. Please note, however, that this form is also called Standard Form 3320-1 and both numbers appear on the physical document. Because our current user community and documentation refer to SF-3320-1 and we do not wish to confuse submitters, we will continue to refer to SF-3320-1 in our communications.

Additionally, all the State and Federal electronic DMR systems are 3320-1 compliant.

Report Recommendation 5:

- ***Complete new rules that require states to report minor facility data.***

OECA Response:

OECA strongly agrees with the recommendation to complete the rulemaking process requiring the electronic submission of facility-level data by permittees and States. OECA is currently developing a rule which will significantly improve the NPDES data quality and completeness nationally. A key component of this rulemaking is the requirement for electronic reporting of certain NPDES information from the permittees, including non-major facilities, to states and EPA. This NPDES information is generally obtained on paper forms rather than electronically, although some states have developed electronic reporting tools. Therefore, this

rule may likely change the mode by which the permittees report, and make additional data available to EPA, without requiring additional information to be collected and submitted by the permittees. This will also result in the reduction of burden on state programs caused by the handling of paper forms.

This proposed requirement for electronic reporting of NPDES information from the permittees may likely include information such as discharge monitoring reports (DMRs), program reports, notices of intent to discharge, etc. As a supplement to that information from permittees, other information will likely be required to be reported by the states to EPA regarding the states' implementation activities (such as inspections, violation determinations, enforcement actions, and permit issuance) for major and non-major facilities as well as for NPDES subprograms (e.g., pretreatment, biosolids, CAFOs, etc.).

EPA currently projects issuance of this proposed rule in June 2011. Following a comment period, EPA expects to issue a final rule regarding this matter circa September 2012.

Report Recommendation 6:

- ***Place a notice on the EPA ECHO website stating that ECHO does not contain all minor facility data. The wording and placement of the notice should be designed to help provide the public with transparency into the actual data elements maintained in ECHO.***

OECA Response:

OECA agrees that the public needs to be aware that not all minor facility data is currently represented in ECHO. OECA does provide several notices to the public on the limitations of the data provided by ECHO. OECA has recently added several new features that allow ECHO users to find additional detailed information about the quality and completeness of information, including an interactive map that shows the data entry percentage for minor discharge monitoring data in each state. However, OECA agrees this information can be better organized. For example, we currently use grey text to indicate that there are data caveats. We will enhance this grey text so it is more recognizable to ECHO users. OECA will evaluate each area where the existing notice is displayed and determine if it needs to be enhanced. OECA will also evaluate its ECHO site as a whole and determine if additional notices need to be added. OECA regularly enhances the ECHO website, and will continue its practice of providing the public with caveats concerning the data.

Report Recommendation 7:

- *Conduct a review of the procedures used to test ICIS-NPDES programming code before it is placed into production.*

OECA Response:

The procedures used to test ICIS-NPDES software undergo regular review to ensure that they result in software that meets stated requirements, is as free from defects as possible, and adheres to Agency standards for security. All phases of testing and their results are documented including functional, system, integration (end to end), and user testing phases. Results of deployments are reviewed during the weeks following deployments to identify any areas of concern, weakness or improvement. Changes in testing procedures due to changed security requirements, or necessitated by changes in the Agency’s National Computer Center (NCC) procedures or environment, are discussed during the ICIS Bi-weekly calls with NCC management and staff and the ICIS Team and their contractor. All organizations involved with each release of ICIS software review an implementation checklist which documents all steps, the party responsible and the timing of the steps; and all parties participate in a meeting to walk through what has to be done for any particular implementation. Immediately following any deployment and before software is released to the user community, a “smoke” test is performed to ensure that the software has been correctly deployed. Because of these procedures and their ongoing review, ICIS software is typically implemented into production with few, if any, defects or problems.

One change to these procedures that is in the trial stage this year is the use of an automated testing tool to streamline regression testing, specifically for the more complex portions of the system. Changes to these areas of the software require a good deal of regression testing to ensure that software continues to function correctly. It is anticipated that the use of an automated testing tool will not only cut down on the amount of time needed to perform regression testing but will ensure that testing scenarios are not overlooked.

Table of Planned Milestone Dates

Corrective Action #	Planned Milestone	Recommendation/Comments
1-1	Ongoing – Planned end date for the conversion from PCS to ICIS is FY2013.	The management control structures set up for the conversion from PCS to ICIS will continue to be in place through the completion of the PCS Modernization and movement of all states from PCS to ICIS in FY2013.
2-1	Closed	Consistent with OECA’s FY 2011 NPM Guidance, OECA commits to continuing to include Environmental Information Exchange Network language in future

		NPM Guidance documents. Attached is the OECA FY 2011 NPM Guidance.
3-1	July 2011	OECA commits to using National Meetings as forums for panel and other discussions to allow states to share their data quality best practices.
4-1	Ongoing – Plan to close this milestone in FY2011 after doing one message via each venue (i.e., one training, one user call, one newsletter, one mass email).	OECA will remind EPA regional offices and states via trainings, user calls, newsletters and e-mails to use the DMR Standard Form 3320-1.
5-1	June 2011	Publication of the proposed NPDES Electronic Reporting Rule in the Federal Register
5-2	September 2012	Publication of the final NPDES Electronic Reporting Rule in the Federal Register
6-1	June 2011	Complete ECHO Review and provide recommendations to enhance transparency and usability.
7-1	Ongoing - Through Q2 of FY2013	OECA is committed to ensuring that ICIS-NPDES software is thoroughly tested prior to deployment. To that end, procedures for testing will continue to be scrutinized on an ongoing basis. Ongoing action will continue through Q2 of FY2013, which is the last scheduled major software release of ICIS-NPDES full batch development.

If you have any questions or concerns, please contact Gwendolyn Spriggs, OECA Audit Liaison, at 202-564-2439.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 14 2011

OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

MEMORANDUM

SUBJECT: ECHO Data Quality Audit - Phase 2 Results: EPA Could Achieve Data Quality Rate With Additional Improvements, Report No. 10-P-0230

FROM: Lisa Lund *Lisa Lund*
Director, Office of Compliance

TO: Rudolph M. Brevard
Director, Information Resources Management Assessments
Office of Inspector General

Thank you for your request of February 2, 2011 concerning OECA's response to the final report titled, "ECHO Data Quality Audit -Phase 2 Results: EPA Could Achieve Data Quality Rate With Additional Improvements". Your requests for additional information are repeated below, along with our responses. This memo concludes with a revised action plan, per your request.

Recommendation 2: Please provide a milestone date when OECA would include language requiring the use of the National Exchange Network in the OECA's FY2011 NPM guidance.

Additional OECA Response:

The language is already included in OECA's FY2011 NPM Guidance (see attached) and will remain in the FY2012 Guidance. We expect the draft FY2012 guidance to be submitted to OCFO near February 18, 2011.

Recommendation 4: Please provide what processes OECA will implement to provide reminders to EPA regional offices and State environmental offices to use the standard Form 2040-0004 for data entry. The current plan does not indicate what will be done beyond FY 2011.

Additional OECA Response:

OECA will remind EPA regional offices and states via trainings, user calls, newsletters and e-mails to use the DMR Standard Form 3320-1(OMB 2040-0004) per the following schedules starting in April 2011:

Communication Tool	Date
ICIS Newsletter	Quarterly
ICIS Federal Enforcement & Compliance User Calls	Every other month
ICIS-NPDES User Calls	Monthly
NetDMR User Calls	Monthly
ICIS Guidance Webpage at http://www.epa.gov/compliance/data/systems/icis/guidance.html	Immediately
ICIS Trainings	Quarterly, Monthly
ICIS Communication Email Subscription	Immediately

Recommendation 5: Please provide the key intermediate action steps and related milestone dates that will take place leading up to OECA publishing the final NPDES Electronic Reporting rule.

Additional OECA Response:

The key intermediate action steps and related milestone dates that will take place leading up to OECA publishing the final NPDES Electronic Reporting rule are as follows:

- EPA plans to begin Final Agency Review (FAR) of the proposed rule package in March 2011, followed by OMB review.
- EPA currently projects issuance of this proposed rule in June 2011.
- EPA expects to issue a final rule regarding this matter around September 2012.

Recommendation 6: Please provide more information on when the final organization of ECHO information will be completed. The response indicates that the office agrees with the recommendation and agrees that the information can be organized better.

Additional OECA Response:

OIG requested more information on when the final organization of ECHO information will be completed. The additional information is as follows:

- The final ECHO Redesign is tied closely with our IDEA Data Warehouse Modernization effort.
- The complete redesign will occur once IDEA modernization phase 2 is completed. Phase 2 is currently projected to be completed in April 2012. This date, however, will be adversely impacted by possible FY11 funding decreases.

Recommendation 7: Please specify when the office would document its proposed testing procedure results described in the response. Please also provide the milestone date when the office would implement the proposed new automated testing tool.

Additional OECA Response:

The ICIS system testing standards and guidelines are followed for all ICIS releases and we document testing procedure results for all ICIS releases. The next major ICIS release is scheduled for February 28, 2011.

The ICIS contractor currently works from documented testing procedures and testing plans. There is an existing ICIS O&M Test Plan document which describes the testing procedures and includes the templates used for documenting test scenarios and test cases and capturing test results. The contractor O&M Testing Team works from these procedures and uses the templates as currently defined. In addition, for each release of ICIS-NPDES Full Batch functionality, a separate Test Plan document is created and reviewed and used by the Test Team to perform testing of the new software. All of these documents are formal contract deliverables, including test cases with results. As part of the final testing before any new or revised software is implemented into production, the ICIS Team at EPA and selected staff from the ICIS user community also perform testing of all enhancements, defect corrections, and new functionality. Results are captured on reporting spreadsheets and provided to the ICIS contractor, who then makes corrections as necessary. Revised software is redeployed and retested. Newly deployed ICIS software typically has few, if any, defects.

We are at this time reviewing and making some modifications to our testing procedures. This is being done primarily to reduce the amount of time and effort needed to perform testing, specifically regression and smoke testing phases. The system has grown significantly since it was initially implemented; this will continue for the next few years. The EPA ICIS Team and the ICIS contractor are having a series of discussions to evaluate smoke testing and regression procedures to ensure that we are hitting the right balance between efficiency and utility. Changes include having the EPA ICIS Team participate earlier in the testing cycle to identify and resolve issues earlier. The automated testing tool called HP Quick Test Pro has been purchased to help streamline regression testing. We have already implemented it in the "pilot" stage, and if successful, a plan will be put into place to integrate the use of this tool into our formal testing procedures. The milestone date for fully implementing the automated tool is dependent upon our evaluation of the utility of the tool.

Revised Action Plan

Corrective Action #	Planned Milestone	Recommendation/Comments
1-1	Ongoing – Planned end date for the conversion from PCS to ICIS is by end of FY2013.	The management control structures set up for the conversion from PCS to ICIS will continue to be in place through the completion of the PCS Modernization and movement of all states from PCS to ICIS by end of FY2013.
2-1	February 2011	Consistent with OECA’s FY 2011 NPM Guidance, OECA commits to continuing to include Environmental Information

		Exchange Network language in future NPM Guidance documents. Attached is the OECA FY 2011 NPM Guidance.
3-1	July 2011	OECA commits to using National Meetings as forums for panel and other discussions to allow states to share their data quality best practices.
4-1	Ongoing	OECA will remind EPA regional offices and states via trainings, user calls, newsletters and e-mails to use the DMR Standard Form 3320-1.
5-1	July 2011	Publication of the proposed NPDES Electronic Reporting Rule in the Federal Register
5-2	September 2012	Publication of the final NPDES Electronic Reporting Rule in the Federal Register
6-1	June 2011	Complete ECHO Review and provide recommendations to enhance transparency and usability. Implementation of recommendations is scheduled for April 2012, pending resource availability.
7-1	Ongoing - Through Q2 of FY2013	OECA is committed to ensuring that ICIS-NPDES software is thoroughly tested prior to deployment. To that end, procedures for testing will continue to be scrutinized with each release. Testing procedures will continue through Q2 of FY2013, which is the last scheduled major software release of ICIS-NPDES full batch development.

If you have any questions or concerns, please contact Gwendolyn Spriggs, OECA Audit Liaison, at 202-564-2439.