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Summary Report
Records Management Inspections
Research and Development Records
FY 2018 - FY 2019

National Archives and Records Administration
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INTRODUCTION

The National Archives and Records Administration (NARA) is responsible for assessing the proper management of records in all media within Federal agencies to protect rights, assure government accountability, and preserve and make available records of enduring value. Under 44 U.S.C. 2904(c)(7) and 2906, NARA has the authority to conduct inspections or surveys of the records and records management practices of Federal agencies for the purpose of providing recommendations for improvements.[1] The criteria for selecting agencies for inspection or records management program review include, but are not limited to, the results of an agency's annual records management self-assessment, the significance of certain records and the related business processes, the risk of improper management of records, and the presence of important issues that are relevant to the management of Federal records in general.

In FY 2018 and 2019, NARA conducted a series of inspections investigating the management of research and development (R&D) or scientific records at five Federal agencies. While only a small sample, these five agencies are representative of the various types of research being conducted by Federal agencies, the different approaches that are taken to scientific data management and stewardship, and the incorporation of records management (RM) into agency R&D operations.

The following science and research centers were included in the inspection. For individual inspection reports, see https://www.archives.gov/records-mgmt/resources/rm-inspections.

- Department of Department of Commerce (DOC) – National Oceanic and Atmospheric Administration (NOAA) - National Centers for Environmental Information
- Department of Health and Human Services (HHS) – Centers for Disease Control and Prevention (CDC)
    - National Center for Emerging and Zoonotic Infectious Diseases
    - National Center for Health Statistics
    - National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
    - National Center for Immunization and Respiratory Diseases
- Department of the Interior (DOI) – U.S. Geological Survey (USGS)
    - Central Energy Resources Science Center
    - Colorado Water Science Center
    - Geologic Hazards Science Center
    - Geology, Geophysics, and Geochemistry Science Center
- National Aeronautics and Space Administration (NASA)

[1] Records Management by the Archivist of the United States (44 U.S.C. Chapter 29), https://www.archives.gov/about/laws/records-management.html#2904.

    - Ames Research Center
    - Goddard Space Flight Center
    - Jet Propulsion Laboratory
- Tennessee Valley Authority (TVA)[2]

The long-term business need for R&D data poses unique challenges for preservation, access, and eventual transfer of permanent records to the National Archives. The overall intent of these inspections was to determine if agencies have essential policies, procedures and processes for the creation, access and protection of R&D records and the eventual transfer of permanent R&D records to the National Archives. NARA also sought to identify unique and common challenges, risks, and trends that might be of interest to records management programs in other Federal agencies that create and maintain R&D records.

This report provides commitments from NARA and recommendations for action by Federal agencies to mitigate records management risk and incorporate best practices, where appropriate. Additionally, it presents NARA's key observations common to these agencies for the benefit of other Federal agencies that create and maintain R&D records.

The following chart rates each of the participating agencies' records management integration or compliance with RM statutes and regulations for the main topics of this summary. Please note these inspections were conducted on a subset of records (namely R&D) and of a selected sample of participating agency centers and programs. These ratings do not represent the level of compliance or RM integration for an entire agency RM program. For more details on each inspected agency, see the respective report at the website listed above.

Research and Development Records RM Inspections Results

	CDC	NASA	NOAA	TVA	USGS
Data Management incorporates Records Management	○	◕	●	○	○
Intellectual control of R&D records	◕	●	●	○	○
Management of unstructured R&D data , shared drives and personal drives	◕	◕	●	○	○
Email management for R&D records	●	◕	○	●	●
Exit clearance processes	●	◕	●	○	◕
RM Network	●	●	●	○	●
Efforts to update R&D records schedules	●	●	●	◕	●
Currency of RM policies, directives, guidance, and manuals	◕	●	●	○	◕
RM Program Evaluations	○	◕	●	◕	◕
RM Training	●	◕	●	○	◕

Key	
RM fully integrated or compliant with RM statutes and regulations	●
RM mostly integrated or compliant with RM statutes and regulations	◕
Needs improvement in order for RM to be integrated and comply with RM statutes and regulations	○

[2] While TVA has transitioned away from a robust internal R&D program to the outsourcing of much of its R&D activities, the agency was included in this inspection series as a way to gauge the impact of this transition on recordkeeping for R&D records.

DATA MANAGEMENT AND RECORDS MANAGEMENT

Data management and records management were the two overarching themes in this R&D-focused inspection. Data management in a very basic sense involves collecting, maintaining, processing, and analyzing data; publishing or otherwise disseminating results and data; and preserving data for future use and re-use. Records management incorporates many of these same activities, although not all data is a record. The major difference between the two is records management legally differentiates between types of data by declaring it a record and legally imposing disposition time frames and related specific instructions for destruction of temporary records and maintaining permanent records. (In the case of Federal records, this means transferring permanent records to the National Archives.) Within the data management theme, data governance emphasizes formal authority and accountability to manage data as a valued, organizational asset. As a result, there was a common shared framework to manage R&D records.

Based on this small sample of agencies, NARA found that agencies who create and maintain R&D records manage the data effectively through established governance[3] policies that comply with Federal Government data management regulations and standards. Records management in terms of creation, maintenance, and preservation is to some extent intertwined and embedded into R&D project management through common procedural phase-based project methodologies, and meeting general project requirements and best practices. In order to propose a project or research study, gather and/or create data, and publish or release results for stakeholders, it is vital for R&D staff to maintain an appropriate level of recordkeeping to document process and maintain intellectual control over the records and data. Preservation of these records and data is an important aspect of R&D project management, though, as was noted during this inspection series, it often ended with the publication of results or dissemination of data to stakeholders. The inclusion of instructions for disposition according to NARA-approved records schedules (a key function of records management) was sometimes missing.

The agencies inspected demonstrated varying levels of records management and data management. Those utilizing more promising methods may serve as an example to agencies that create and maintain R&D records, as well as to the larger RM community. NARA notes below the key observations that include common challenges, risks, and trends.

[3] Information governance is the overarching and coordinating strategy for all organizational information. It establishes the authorities, supports, processes, capabilities, structures, and infrastructure to enable information to be a useful asset and reduced liability to an organization, based on that organization's specific business requirements and risk tolerance, https://www.arma.org/page/Information_Governance.

KEY OBSERVATIONS

Governance and Intellectual Control

Data management and stewardship increase RM inclusion and collaboration with project staff which contributes to the identification and management of R&D records, but plans lack final disposition instructions that align with NARA-approved records schedules.

The use of data management plans (DMP) or similar plans to manage R&D projects throughout the project lifecycle is a common practice of research project management. Plans included a variety of information such as a description of the data to be managed including formats, data inputs and outputs, the project manager or data steward responsible for ensuring the proper management of the data, metadata requirements, use restrictions, and methods for data access and dissemination. However, not all plans specifically included final disposition instructions. While the creation of DMPs was not required at all agencies, it is at the very least a best practice that, with the incorporation of RM requirements, will help staff see the correlation between data and records, and ensure records management is a part of the overall project planning and data management process.

It was policy at a couple of agencies that RM staff collaborate with R&D project managers (sometimes referred to as gatekeepers) from the beginning stages of DMP creation through the end of the project to ensure that records and data created and maintained throughout the project lifecycle met recordkeeping requirements and were dispositioned according to NARA-approved records schedules. Another agency had RM staff following up with project managers as projects were winding down.

Good governance and internal controls need to be in place to maintain intellectual control of R&D records.

Having intellectual control (i.e., knowing the types of records created, the content of the records, how and why they are created, and ownership) is essential for putting records management into practice and for meeting any agency's mission. It provides efficiency in process and accountability to stakeholders. For R&D projects, having intellectual control is a basic step in being able to identify and retrieve files, complete projects, meet standards, and provide access and preservation.

At least two of the agencies inspected were not fully aware of what R&D records were being created and maintained and where they were being stored. One of those agencies was also unsure of records ownership due to lack of clarity on records management requirements in R&D contracts. Records were often created in various locations without standard taxonomies and naming conventions. There were obsolete file formats containing unknown data. Records inventories and file plans either had not been created or were not being utilized properly. Having all of these controls in place would aid staff in locating and re-using R&D records and data, minimize redundancies in data creation, and facilitate disposition per NARA-approved records schedules.

Electronic Records Management

Some agencies are struggling to manage unstructured R&D data, shared network drives, and personal drives.

All of the agencies were using some kind of electronic recordkeeping system for managing their R&D records. One agency was using an Enterprise Content Management system. The other agencies were using a variety of data management systems and electronic records repositories based on a particular program's or project's needs. While there is still work to be done in this area, some agencies were successfully and systematically applying classification schemes and naming conventions as well as populating record metadata. Some were building approved schedules into the systems, while others relied more on the RM staff to apply disposition. For the most part, the R&D data and records maintained in these systems of record were being appropriately managed.

Where some agencies struggle is with the records and information that is being maintained outside these systems on shared network and personal drives, and in office space and filing cabinets. As mentioned previously, agencies are not always aware of what types of records are being created and where, whether they are scheduled, and how or if disposition is being applied. It's this unstructured (and sometimes unaccounted for) data and records that agencies find hard to get a handle on. Instituting internal controls such as inventories and file plans; RM policies and procedures addressing these types of records; and access controls will aid in bringing awareness to these records and improve compliance with Federal RM regulations.

Email Management

The majority of agencies are capturing email containing R&D records.

Focusing on just one body of records, like R&D, can provide limited insight into email practices as a whole. When dealing with large projects like R&D there are discussions, sharing of results, and conclusions made within the content and context of email. In these cases, the emails are records and may require more specific records scheduling than general email approaches.

The majority of the agencies have either a NARA-approved Capstone schedule[4] in place with policies for managing non-Capstone officials' email or an agency-specific schedule that covers record email of staff working on R&D projects and studies. At least three agencies require R&D staff to save project-related emails to project files. While the majority of agencies have email scheduled, one agency still does not have an approved schedule covering email.[5] Another agency, while it has an approved Capstone schedule in place, is struggling to ensure

[4] NARA Bulletin 2013-02: *Guidance on a New Approach to Managing Email Records*, https://www.archives.gov/records-mgmt/bulletins/2013/2013-02.html.

[5] This agency has a draft form NA-1005 (Verification for Implementing GRS 6.1 (or Capstone GRS)) but has yet to obtain internal departmental clearance. In the meantime, this agency is capturing all email and has policies in place for the management of email.

implementation across all centers. Having an approved schedule in place for email, and ensuring its implementation enterprise-wide, is essential for appropriately dispositioning both permanent and temporary R&D records and for mitigating the risk of unauthorized dispositions.

Exit Clearance Process

The majority of the agencies lacked adequate exit clearance processes to ensure the safeguarding of records of departing staff including those associated with R&D projects.

Federal regulations require that agencies include procedures to ensure that departing officials and employees (including staff engaged in R&D projects) do not remove Federal records from agency custody. The majority of the agencies lacked adequate exit clearance processes to ensure the safeguarding of records of departing staff including those responsible for R&D contracts and those associated with R&D projects. RM staff at two of the agencies were largely kept out of the exit clearance process. They were often not notified of departing staff, and were not involved in exit interviews or other exit processes. One of these agencies primarily placed the responsibilities of ensuring the safeguarding of R&D records on the R&D project managers. A third agency did not have adequate controls in place for staff who left official agency employment, but converted to a different employment status (such as emeritus positions) so as to continue providing scientific knowledge and project contributions to the agency. These individuals sometimes continued to create and maintain agency records. The other two agencies have implemented systematic processes and policies to ensure that records were handled properly and to prevent the alienation or unauthorized disposition of records. It is essential that agencies ensure that records are clearly protected from unauthorized access and removal by departing staff by including a review of records as part of the exit clearance process.

RM Program Management

Most agencies had a network of designated staff with RM responsibilities that manage R&D records.

36 CFR 1220.34 requires agencies to assign RM responsibilities in each program (mission) area to ensure incorporation of recordkeeping requirements and records maintenance, storage, and disposition practices into agency programs, processes, systems, and procedures. Designating staff with RM responsibilities within program areas across agencies, not just in units that create and maintain R&D records, is vital for ensuring agency compliance with Federal records management statutes and regulations, embedding RM across the enterprise in daily business functions, and in assisting the Agency Records Officer (ARO) in providing RM assistance to staff.

Most agencies inspected have a network of designated RM roles that actively works with the ARO in the management of their R&D project and other records. This is encouraging as our findings from other agency inspections often show the lack of a well-structured and fully supported RM network. In only one case did we find this was lacking, and we noted the issue in a recommendation for follow-up action. Having this network in place is a vital foundational step

to managing R&D records (and all agency records) appropriately.

Records schedules for R&D/scientific records often do not meet current business needs and require updating.

Current records schedules are not just a regulatory requirement -- they also serve as the foundation for any records management program. They enable agencies to enact the legal authority approved by the Archivist of the United States to properly dispose of temporary records and to transfer permanent records to the National Archives.

The majority of the agencies have records schedules for R&D/scientific/research records that are not meeting current business needs. Three of the five agencies are actively working to reschedule these records, with at least two agencies holding focus group meetings to gather input on the schedules. One agency had recently updated their R&D schedules to better meet their business needs. The other agency was using schedules approved in 2010 that may need to be reviewed. It is important to note that the agencies who are working to reschedule their R&D records are taking a closer look at business processes, existing data dissemination practices, the re-use of R&D data, and the long-term business needs of the records. Once submitted to NARA for approval, the new schedules should help to improve implementation of dispositions for R&D records.

RM Policies and Guidance

The majority of agencies have relatively current records management directives, policies, and guidance to direct and aid agency RM and mission staff in the management of records.

Up-to-date RM policy and guidance are foundational elements of any RM program. They provide the requirements, direction, and support to enable agency staff to meet not only Federal RM statutes and regulations, but also agency business needs. These are especially critical for R&D staff as they often have additional scientific and research standards and data challenges that need to be addressed to meet project requirements for preserving and disseminating project/study data to the stakeholder public and international research community. R&D staff need the additional guidance to ensure they can manage and preserve data long-term ensuring the ability to leverage R&D data for future projects.

The majority of agencies have relatively current records management directives, policies, and guidance to direct and aid agency RM and mission staff in the management of records. For this particular inspection series, mission staff included a variety of project management, scientific and research roles, all of whom were either creating or maintaining R&D records and information. RM handbooks, manuals, templates, and project and data management plans were some of the products used to disseminate this information to both RM and mission/project staff. The guidance varied in scope with some providing overall RM requirements for all records while others were geared to specific R&D projects supplementing the agency-wide guidance. Some guidance products included detailed recommended naming conventions and required metadata. All agencies at the time of the inspections were in the process of reviewing and/or updating RM

policies, directives, guidance, and manuals to ensure they reflected the most current requirements on managing records in all formats.

RM Training

The management of R&D records would be improved through role-based RM training for R&D staff and mandatory annual RM training.

Agency employees involved in R&D projects have unique challenges in the creation, oversight, management, and preservation of records. It is important for staff to be able to determine the relationship between scientific/research data and records; when their data is considered to be a record; and how to address records management for the data after it has been published or otherwise disseminated, and/or the project has closed, particularly when the data is re-purposed for additional or other research or the project has no end date. R&D staff also have additional challenges in the volume of data created or received that needs to be maintained, the highly technical nature of the data, and the formats in which that data is created and maintained.

Federal regulations require agencies to provide records management guidance and training to all personnel (36 CFR 1220.34(f)). NARA Bulletin 2017-01: *Agency Records Management Training Requirements* requires all staff, contractors, and volunteers to take annual RM training specific to the agency.[6] The bulletin also recommends, as a best practice, the development and implementation of role-based RM training. The majority of the agencies had mandatory annual RM training for all staff; however, at two of the agencies, RM training was being applied inconsistently or was not required. While there is no Federal regulation that requires R&D staff, specifically, receive role-based training, agency staff engaged in R&D work need a better understanding of their unique responsibilities for managing R&D records. Acknowledging this, two agencies had created, above and beyond the required annual agency-specific RM training, role-based or task-based training (or were in the process of expanding their role-based offerings) for staff who create and maintain R&D records. At another agency, one particular project had implemented role-based training specific to that project; however, this was not an agency-wide practice. The advantage of role-based training is it addresses the specific needs of the people attending the training and they are more likely to use what they have learned. Agencies should consider developing such training for specialized roles like R&D staff.

RM Evaluations

Most of the agencies were not conducting regular, formal comprehensive records management inspections, evaluations, assessments or audits as required by 36 CFR 1220.34(j).

Effective evaluations are an important part of any RM program. Comprehensive evaluations are essential to measure the adequacy and effectiveness of agency policies, procedures, and guidance

[6] NARA Bulletin 2017-01: *Agency Records Management Training Requirements*, https://www.archives.gov/records-mgmt/bulletins/2017/2017-01-html.

and ensure that programs are in compliance with Federal regulations. Only one agency demonstrated a systematic process for conducting formal, comprehensive RM reviews or assessments. The other agencies were either not conducting RM evaluations, or they were being done on an ad hoc and/or limited basis. The lack of records management evaluation programs within the agencies is of concern.

Any difficulties an agency is experiencing in the management of R&D records would, during the course of a regular, formal, and comprehensive RM evaluation, be documented and subsequently corrected. Without conducting formal inspections, documenting the results, and monitoring the implementation of recommendations, it is difficult for records officers to know how records management is practiced throughout the agency, to identify areas of non-compliance, and to mitigate risks of non-compliance. Without any kind of evaluation of records management program implementation, agencies cannot determine the effectiveness of their policies, procedures, and internal controls, or have other assurances that their R&D records and data are being created, maintained, made accessible, and preserved until eligible for disposition per NARA-approved records schedules.

CONCLUSION

This inspection series focused on the participating agency science and research centers that are creating and maintaining R&D records. Many agencies that create and maintain R&D records may use these same approaches for R&D and have these same challenges and risks. This summary report documents trends and common challenges within these agencies that may be useful to these and other Federal agencies.

As noted in this report, agencies are experiencing some successes and some challenges in the management of R&D records. The use of Data Management Plans with the incorporation of RM and records disposition is one example of a best practice that, if not already being utilized by agencies creating R&D records, should be included in regular project and data management. Role-based training for staff who create and maintain R&D records is another best practice that would help them better understand the relationship between data and records and how to address records management for the data throughout its lifecycle, from creation through publication and dissemination.

Areas that need improvement include agencies regaining or maintaining intellectual control of R&D records; conducting records inventories and creating file plans; using standard classification schemes and naming conventions; updating R&D schedules so they meet current business needs; keeping RM policies and guidance products for R&D records up to date; and having staff assigned to RM roles to assist R&D staff in the management of their records including disposition; among others. By making improvements in these areas, agencies will strengthen their compliance with records management requirements; further integrate records management into existing data management frameworks; enhance the preservation of R&D records; help mitigate risks to R&D records; and better contribute to agency R&D missions.

RECOMMENDATIONS FOR EXECUTIVE ACTION

Based on the observations and data collected by the NARA inspection team, this report makes the following commitments for action by NARA and recommendations for Federal agencies.

What NARA will do:

- Have policies and processes in place to support Federal agencies' transition to fully electronic recordkeeping.
- Continue its efforts to provide policy and guidance for electronic records management, information stewardship, and governance.
- Enhance its support of Federal agency records management officials with effective policies, modern tools, and new services to support the transition to electronic records.
- Develop Federal records management requirements and work with Federal and commercial vendors to incorporate the requirements into software applications and cloud offerings.
- Provide reasonable and independent assurance that agencies are complying with relevant laws and regulations.
- Establish appraisal, scheduling, and pre-accessioning processes that reflect modern electronic records management.
- Redesign records management training to assist agencies in building a records management workforce that is skilled in electronic records and data management.
- Provide policy and guidance on the creation and maintenance of records management directives and policies.

What agencies must/should do:

The following general recommendations, if addressed, will improve the management of R&D records in agencies:[7]

- Agencies must continue or expand the inclusion of records management as part of the use of data management, data stewardship, and lifecycle project management methodology. (36 CFR 1220.34(e), 36 CFR 1224.10(d), 36 CFR 1232.14(a), and 36 CFR 1236)
- Agencies must establish and maintain internal controls for the management of R&D records. (OMB Circular No. A-123, Management's Responsibility for Enterprise Risk Management and Internal Control)
- Agencies must improve the management of unstructured data. (36 CFR 1236.24)
- Agencies must properly capture email records. (36 CFR 1236.22)
- Agencies must conduct evaluations, inspections or audits of their RM programs, including on the management of R&D records and data, to provide assurance that

[7] For specific and more comprehensive recommendations per each participant, see individual reports at: https://www.archives.gov/records-mgmt/resources/rm-inspections.

records are being created, maintained, made accessible, and preserved until eligible for disposition per NARA-approved records schedules. (36 CFR 1220.18)

- Agencies must develop training programs based on agency policies, procedures, and records schedules, and should develop role-based training to aid R&D staff in the management of R&D records. (36 CFR 1220.23(f) and NARA Bulletin 2017-01)
- Agencies should also be aware of and implement into their electronic records management the *Universal Electronic Records Management Requirements*, published by NARA on August 4, 2017; *Criteria for Successfully Managing Permanent Records*, published by NARA on March 16, 2018; and the *Criteria for Managing Email Records in Compliance with the Managing Government Records Directive (M-12-18)* (Success Criteria for Managing Email Records), published by NARA on April 6, 2016.

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