ADAMS Application Programming Interface (API): Developer's Guide

Spring 2013

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In This Guide

This guide describes how to create a restful query to request data from the ADAMS Application Programming Interface (API), as well as several application-specific APIs that also use the ADAMS API query format and database. At the end of the guide are appendices listing specific query parameters, operators, and values allowed for the APIs, along with a sample XML result set to show the format of the data that the API will return when it receives a query.

The ADAMS Application Programming Interface

The U.S. Nuclear Regulatory Commission (NRC) ADAMS Application Programming Interface (API) is a web service for accessing data from adams.nrc.gov, which contains a copy of the NRC's official repository of publicly available documents. The Agency-wide Documents Access and Management System (ADAMS) is the NRC's official record system for documents.

By adding parameters to the base API Uniform Resource Locator (URL) (http://adams.nrc.gov/wba/services/search/advanced/nrc), you can request lists of documents and associated metadata. The data is output in XML format, which can be used for data analyses, building custom reports, integrations, and other programmatic access to NRC data. Several applications of the generic API are available.

Available API Applications

API	URL Format
Content Search	`http://adams.nrc.gov/wba/services/search/advanced/nrc?q=<data_parameters>&qn=<query_name>&tab=content-search-pars&s=<sort_property>&so=ASC|DESC`
Advanced Search	`http://adams.nrc.gov/wba/services/search/advanced/nrc?q=<data_parameters>&qn=<query_name>&tab=advanced-search-pars&s=<sort_property>&so=ASC|DESC`
Part 21 Search	Use either the Content Search or Advanced Search, but with `!(DocumentType,eq,'Part+21+Correspondence','')` in the query `<data_parameters>`
Operating Reactor Inspection Report Search	Use either the Content Search or Advanced Search, but with `!(DocumentType,[infolder|starts],'inspection+report',''),!(DocketNumber,[infolder|starts],'05000','')` in the query `<data_parameters>`

How do I become authorized to access the APIs?

The APIs are freely available to the public.

What should I know about adams.nrc.gov data before I get started?

Adams.nrc.gov contains hundreds of thousands of full-text documents that the NRC has released since November 1, 1999, and several hundred new documents are added each day.

The following document libraries at adams.nrc.gov are available to the APIs:

- **Public Library.** Contains all image and text documents that the NRC has made public since November 1, 1999—over 800,000 full-text documents, and over 60,000 packages (virtual containers of related documents). This collection includes publicly available regulatory guides, NUREG-series reports, inspection reports, Commission documents, correspondence, and other regulatory and technical documents written by NRC staff, contractors, and licensees. The Public Library is available through both the Content Search API and the Advanced Search API.
- **Legacy Public Library.** Contains over 1.9 million bibliographic records (some with abstracts and full text) that the NRC made public before November 1999. The Legacy Public Library is available only through the Advanced Search API.

Data will change over the course of the day as the NRC issues new documents. For this reason counts may vary and may age quickly, depending on site activity and time.

Search result sets for all APIs in this guide are limited to 1,000 results. If more than 1,0000 documents match the search criteria, then the following will occur:

- only the first 1,000 matches will be returned,
- the <matches>. . .</matches> field in the result set will be set to
  `LocalizedMessage{key='search.documents.limit.exceed.message', params=[1000]}` and
- the **<count>. . .</count>** field in the result set will be set to **1000**.

The allowed values for several of the document properties available through the APIs are provided or referenced in the appendices. However this is not a complete list of all the allowable values for all the properties, since the ADAMS database contains many thousands of possible values for several other of the properties, such as AuthorName and AddresseeAffiliation.

To browse the latest property value lists, use the following sample query to view an advanced search of the Web-Based ADAMS interface. This query, which is formatted in a manner similar to the Web API queries in this guide, presents the full WBA graphical interface with several key property fields prepopulated. For more help with the ADAMS WBA interface, see the WBA User Guide.[1]

What are the primary differences between a Content Search and an Advanced Search?

A content search will retrieve a list of documents where the body of the document contains the

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[1] http://www.nrc.gov/reading-rm/adams/wba-user-guide.pdf

search phrase specified in the search query. If any document property properties (title, author, date, etc.) are also specified in the query, the search results will be further limited to those documents with matching properties. The scope of documents available to a content search is limited to the NRC's Public Library.

An advanced search will retrieve a list of documents that contain properties (title, author, date, etc.) that match those also specified in the query, similar to those in a content search. However, the advanced search includes additional query operators, a wider scope of documents (both the Public Library and the Public Legacy Library), and additional options not available to a content search.

Additional options available to an advanced search include filtering based on the following criteria:

- **Added this month.** Limits the result set to documents added to the Public Library this month.
- **Added today.** Limits the result set to documents added to the Public Library today.
- **Files within a specified folder.** Limits the result set to documents added to the specified folder in the Public Library. The folders correspond to collections of all documents added to the Public Library by month and day.

Content Search Query

Query Format

```
http://adams.nrc.gov/wba/services/search/advanced/nrc?q=(
    mode:sections,
    sections:(
        filters:(
            public-library:!t
            ),
        properties_search:!(
            !(<property>,<operation>,<value>,'')
            [,!(<property>,<operation>,<value>,'')]
            ),
        properties_search_any:!(
            !(<property>,<operation>,<value>,'')
            [,!(<property>,<operation>,<value>,'')]
            ),
        single_content_search:<content-search-string>
        )
    )&qn=<query_name>&tab=content-search-pars&s=<sort_property>&so=<sort_order>
```

Query Parameters

The query parameters are arranged in two groups:

1. the **general parameters** that define the scope and sorting criteria for the result set, and
2. the **data parameters** which set the filters to be applied in finding matching documents. The data parameters are encapsulated in the **q** parameter and then subdivided into four **sections**:
   - `filters [required]`
   - `properties_search`
   - `properties_search_any`
   - `simple_content_search [required]`

General Parameters

Parameter	Description
q	*Required.* The query object, which encapsulates the data arguments in pseudo-json format.
tab	*Required.* The type of search to be performed. Allowed value: `content-search-pars`
qn	*Optional.* The name of the query. If spaces are contained, quote with single quotes.
s	*Optional.* The property name by which the result set will be sorted. See Appendices A, B, and C for lists of available properties, operators, and values.
so	*Optional.* The sort order. Allowed values: `ASC` | `DESC.`

Data Parameters

Section	Parameter	Description
filters	<library-type>	*Required.* Allowed value: `public-library` Flags: `:!t` | `:!f` [true or false] Restricts the scope of documents returned to those in the specified library. Example: `public-library:!t`
<properties_search_type>	n.a.	*Required.* Allowed values: `properties_search | properties_search_any` Encapsulates a list of one or more document properties, each with an associated operator and value. See Appendices A, B, and C for lists of available properties, operators, and values. `properties_search` performs an "AND" search.[2] All properties must match. `properties_search_any` performs an "OR" search. At least one of the properties must match.
properties_search	n.a.	*At least one (<property>,<operator>,<value>) is required.* Encapsulates a list of one or more document properties, each with an associated operator and value. See Appendices A, B, and C for lists of available properties, operators, and values.

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[2] The reserved word for performing an "AND" properties search differs between the Content and Advanced search formats. If using the Content Search format, use `properties_search`. However, if using the Advanced Search format, use `properties_search_all.`

Section	Parameter	Description
<properties_search>	<property>	Name of a property in the documents to be searched.
<properties_search>	<operator>	Comparison to be applied to relate the <property> to the associated <value>.
<properties_search>	<value>	The string to be related to the <property> by the <operator>

Examples:

• `!(DocumentDate,eq,'04/11/2013','')`
• `! (AuthorName,infolder,'Aaroe+W+H','')` |
| | | |
| **single_content_search** | n.a. | *Required.* The value to be matched in a full-text search of the document content. |

Content Search API Examples

Each example in this guide includes a restful API query in two formats: a working query that you can run from your Web browser[3] and a version that is formatted for ease of reading on your screen.

Example 1: Find all enforcement actions for which **Gamma Knife** appears in the body of the document. Sort the results by the date it was added to the public library, showing the earliest first.

Working query - **Query link**

Query formatted for screen display

```
http://adams.nrc.gov/wba/services/search/advanced/nrc?q=(
    mode:sections,sections:(
        filters:(
            public-library:!t),
        ),properties_search_any:!(
            !(DocumentType,ends, 'Enforcement+Action','')
        ),single_content_search: 'Gamma+Knife'
    )
)&qn=New&tab=content-search-pars&s=DocumentDate&so=DESC
```

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[3] Older web browsers may not understand XML format and thus may return a display error if you try to run the working query. In particular, versions of Internet Explorer prior to version 8 may be unable to render the XML result set. If your browser supports XML, the XML result set should appear in a format that resembles the example in Appendix D.

Example 2: Find all NUREG-series technical reports for which **Browns Ferry** appears in the title and **steam generator** appears in the body of the document. Sort the results by publication date, showing the most recent first.

*Working query - **Query link***

Query formatted for screen display

```
http://adams.nrc.gov/wba/services/search/advanced/nrc?q=(
    mode:sections,sections:(
        filters:(
            public-library:!t),
            properties_search:!(
            !('$title',infolder,'Browns+Ferry','')
        ),properties_search_any:!(
            !(DocumentType,ends,NUREG,''),
            !(DocumentType,ends,'NUREG+REPORTS','')
        ),single_content_search:'steam+generator'
    )
)&qn=New&tab=content-search-pars&s=DocumentDate&so=DESC
```

Advanced Search Query

Query Parameters

The query parameters are arranged in two groups:

1. the **general parameters** that define the scope and sorting criteria for the result set, and
2. the **data parameters** which set the filters to be applied in finding matching documents. The data parameters are encapsulated in the **q** parameter and then subdivided into four **sections**:
    - `filters [required]`
    - `options`
    - `properties_search_all`
    - `properties_search_any`

Query Format

```
http://adams.nrc.gov/wba/services/search/advanced/nrc?q=(
    mode:sections,sections:(
        filters:(<library-type>:!t),
        options:(
            [<added-this-month>[,]]
            [<added-today>[,]]
            [<within-folder>]
        ),properties_search_all:!(
            !(<property>,<operation>,<value>,'')
            [,!(<property>,<operation>,<value>,'')]
        ),
        properties_search_any:!(
            !(<property>,<operation>,<value>,'')
            [,!(<property>,<operation>,<value>,'')]
        )
    )
)&qn=<query_name>&tab=advanced-search-
pars&s=<sort_property>&so=<sort_order>
```

General Parameters

Parameter	Description
q	*Required.* The query object, which encapsulates the data arguments in pseudo-json format.
tab	*Required.* The table to display. Allowed value: `advanced-search-pars`
qn	*Optional.* The name of the query. If spaces are contained, quote with single quotes.
s	*Optional.* The property name by which the result set will be sorted. See Appendices A, B, and C for lists of available properties, operators, and values.
so	*Optional.* The sort order. Allowed values: `ASC	DESC.`

Data Parameters

Section	Parameter	Allowed Values & Description
filters	<library-type>	*Required.* Allowed values: `public-library	legacy-library`  Flags: `:!t	:!f`  [true or false]  Restricts the scope of documents returned to those in the specified library.  Example: `public-library:!t`
options	<date-added-range>	Allowed values: `added-today	added-this-month`  Flags: `:!t	:!f` [true or false] Restricts the scope of documents returned to those that were added today or this month

Section	Parameter	Allowed Values & Description
		Example: To search all documents added today: `added-today:!t`

options	<folder-scope>	Allowed value: `within-folder`
		
		Flags: `:!t` | `:!f` [true or false]
		
		Restricts the scope of documents searched to those within the specified folder.
		
		Sub parameters:
		
		• `enable` [flags: `:!t` | `:!f` (true or false)]
		• `insubfolder` [flags: `:!t` | `:!f` (true or false)] Search subfolders under the specified folder.
		• `path` [path to folder, quoted with single quotes]
		
		Examples:
		
		(1) To search entire <library-type>:
		
		`within-folder:(enable:!f,insubfolder:!f,path: '')`
		
		(2) To search only files added to the <library-type> in the month of March 2013
		
		`within-folder:(enable:!t,insubfolder:!t,path:'/Recent+Released+Documents/March+2013')`

<properties_search_type>	n.a.	***Required.*** Allowed values: `properties_search_all	properties_search_any`  Encapsulates a list of one or more document properties, each with an associated operator and value. See Appendices A, B, and C for lists of available properties, operators, and values.  `properties_search_all` performs an "AND" search.[4] All properties must match.  `properties_search_any` performs an "OR" search. At least one of the properties must match.
properties_search	n.a.	***At least one (<property>,<operator>,<value>) is required.*** Encapsulates a list of one or more document properties, each with an associated operator and value. See Appendices A, B, and C for lists of available properties, operators, and values.
<properties_search>	<property>	Name of a property in the documents to be searched.
<properties_search>	<operator>	Comparison to be applied to relate the <property> to the associated

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[4] The reserved word for performing an "AND" properties search differs between the Content and Advanced search formats. If using the Content Search format, use `properties_search`. However, if using the Advanced Search format, use `properties_search_all.`

Section	Parameter	Allowed Values & Description
		<value>.
<properties_search>	<value>	The string to be related to the <property> by the <operator> Examples: • `!(DocumentDate,eq,'04/11/2013','')` • `!  (AuthorName,infolder,'Aaroe+W+H','')`

Advanced API Examples

Example 1: Find all **speeches** for which **Macfarlane** appears in the **Author Name** property. Sort the results alphabetically by document title in ascending order.

Working query - **Query link**

Query formatted for screen display

```
http://adams.nrc.gov/wba/services/search/advanced/nrc?q=(
    mode:sections,sections:(
        filters:(
            public-library:!t),
        options:(
            within-folder:(enable:!f,insubfolder:!f,path:'')
        ),properties_search_all:!(
            !(AuthorName,starts,Macfarlane,''),
            !(DocumentType,starts,Speech,'')
        )
    )
)&qn=New&tab=advanced-search-pars&s=%24title&so=ASC
```

Example 2: Find all **e-mails** released on **May 9, 2013**. Sort the results by document date, showing the earliest first.

Working query - **Query link**

Query formatted for screen display

```
http://adams.nrc.gov/wba/services/search/advanced/nrc?q=(
    mode:sections,sections:(
        filters:(public-library:!t),
        options:(
            within-folder:(
                enable:!t,
                insubfolder:!t,
                path:'/Recent+Released+Documents/May+2013/May+09,+2013
            '
                )
        ),properties_search_all:!(
            !(DocumentType,eq,E-Mail,'')
        )
    )
)&qn=New&tab=advanced-search-pars&s=%24title&so=DESC
```

Search API for Part 21 Reports

The NRC receives reports from its licensees under Part 21 of Title 10 of the *Code of Federal Regulations*. This regulation specifies the conditions under which information must be submitted when a licensed facility, activity, or basic component fails to comply with the *Atomic Energy Act of 1954*, as amended, or other NRC regulations.

Query Format

The Part 21 Search API is a specific application of the generic ADAMS API. Therefore, it inherits all the capabilities and properties described above for the ADAMS Application Programming Interface. To create a restful query for Part 21 reports, simply use either the Content Search Query or the Advanced Search Query format as described previously in the section "The ADAMS Application Programming Interface," but with the following parameters added to the query:

Content Search

Add the following to the `properties_search` section:

```
!(DocumentType,ends,'Part+21+Correspondence','')
```

Advanced Search

Add the following to the `properties_search_all` section:

```
!(DocumentType,eq,'Part+21+Correspondence','')
```

NOTE: You may include any other valid property search filters as separate parameters along with the above parameter. The examples below illustrate several ways to do that.

Query Parameters

Use either the Content Search Query or the Advanced Search Query format as described above.

Examples

Example 1: Find all Part 21 reports added to the NRC's public library by authors affiliated with the NRC Office of Nuclear Reactor Regulation and for which the phrase **safety valve** appears in the report. Sort the results numerically by document size in descending order. This search uses the ADAMS Content Search query format, since it is looking for a phrase that appears in the text of documents.

Working query - **Query link**

Query formatted for screen display

```
http://adams.nrc.gov/wba/services/search/advanced/nrc?q=(
    mode:sections,sections:(
        filters:(
            public-library:!t
            ),
        properties_search:!(
            !(DocumentType,ends,'Part+21+Correspondence',''),
            !(AuthorAffiliation,infolder,NRC/NRR,'')
            ),single_content_search:'safety+valve'
        )
    )&qn=New&tab=content-search-pars&s=%24size&so=DESC
```

Example 2: Find all Part 21 reports added to the NRC's public library that are associated with the Vogtle Electric Generating Plant, Units 1 or 2 (Docket Number 05000424 **or** 05000425), and for which the phrase **pipe** appears in the report. Sort the results by document date in ascending order. This search uses the ADAMS Content Search query format, since it is looking for a phrase that appears in the text of documents.

Working query - **Query link**

Query formatted for screen display

```
http://adams.nrc.gov/wba/services/search/advanced/nrc?q=(
    mode:sections,sections:(
        filters:(
            public-library:!t),
            properties_search:!(
                !(DocumentType,ends,'Part+21+Correspondence','')
            ),properties_search_any:!(
                !(DocketNumber,infolder,'05000424',''),
                !(DocketNumber,infolder,'05000425','')
            ),single_content_search:pipe
        )
    )&qn=New&tab=content-search-pars&s=DocumentDate&so=ASC
```

Example 3: Find all Part 21 reports added to the NRC's public library between 12 a.m., March 1, 2013 and 11:45 p.m. April 1, 2013. Sort the results alphabetically by document title in ascending order. This search uses the ADAMS Advanced Search query format, since it is not looking for a phrase that appears in the text of documents.

Working query - **Query link**

Query formatted for screen display

```
http://adams.nrc.gov/wba/services/search/advanced/nrc?q=(
    mode:sections,sections:(
        filters:(
            public-library:!t
            ),options:(
            within-folder:(
                enable:!f,insubfolder:!f,path:''
            )
        ),properties_search_all:!(
            !(DocumentType,eq,'Part+21+Correspondence',''),
            !(PublishDatePARS,range,(
                left:'03/01/2012+12:00+AM',
                right:'04/01/2013+11:45+PM'
                ),''
            )
        )
    )
)&qn=New&tab=advanced-search-pars&s=%24title&so=ASC
```

Search API for Operating Reactor Inspection Reports

Query Format

The Operating Reactor Inspection Report Search API is a specific application of the generic ADAMS API. Therefore, it inherits all the capabilities and properties described above for the ADAMS Application Programming Interface. To create a restful query for operating reactor inspection reports, simply use either the Content Search Query or the Advanced Search Query format as described previously in the section "The ADAMS Application Programming Interface," but with the following parameters added to the query:

Content Search

Add the following to the **properties_search** section:

```
!(DocumentType,infolder,'inspection+report',''),!(DocketNumber,infolder,'05000','')
```

Advanced Search

Add the following to the **properties_search_all** section:

```
!(DocumentType,starts,'inspection+report',''),!(DocketNumber,starts,'05000','')
```

NOTES: You may include any other valid property search filters as separate parameters along with the above parameter. The examples below illustrate several ways to do that. If the search is intended to find reports for a particular facility, simply use the facility's docket number(s) in place of the generic `05000` provided in the example above. In the above example, 05000 will find reports for *all* Part 50 licensees (i.e., all operating nuclear power plants).

Query Parameters

Use either the Content Search Query or the Advanced Search Query format as described above.

Examples

Example 1: Find operating reactor inspection reports added to the NRC's public library by authors affiliated with the NRC Office of Nuclear Reactor Regulation and for which the phrase *safety valve* appears in the report. Sort the results numerically by document size in descending order. This search uses the ADAMS Content Search query format, since it is looking for a phrase that appears in the text of documents.

Working query - **Query link**

Query formatted for screen display

```
http://adams.nrc.gov/wba/services/search/advanced/nrc?q=(
    mode:sections,sections:(
        filters:(
            public-library:!t
            ),
        properties_search:!(
            !(DocumentType,infolder,'inspection+report',''),
            !(DocketNumber,infolder,'05000',''),
            !(AuthorAffiliation,infolder,NRC/NRR,'')
            ),single_content_search:'safety+valve'
        )
    )&qn=New&tab=content-search-pars&s=%24size&so=DESC
```

Example 2: Find all operating reactor inspection reports added to the NRC's public library that are associated with the Vogtle Electric Generating Plant, Units 1 or 2 (Docket Number 05000424 **or** 05000425), and for which the word *pipe* appears in the report. Sort the results by document date in ascending order. This search uses the ADAMS Content Search query format, since it is looking for a phrase that appears in the text of documents.

Working query - **Query link**

Query formatted for screen display

```
http://adams.nrc.gov/wba/services/search/advanced/nrc?q=(
    mode:sections,sections:(
        filters:(
            public-library:!t),
            properties_search:!(
                !(DocumentType,infolder,'inspection+report',''),
            ),properties_search_any:!(
                !(DocketNumber,ends,'05000424',''),
                !(DocketNumber,ends,'05000425','')
            ),single_content_search:pipe
        )
    )&qn=New&tab=content-search-pars&s=DocumentDate&so=ASC
```

Example 3: Find all operating reactor inspection reports added to the NRC's public library between 12 a.m., April 1, 2013 and 11:45 p.m. May 1, 2013. Sort the results alphabetically by document title in ascending order. This search uses the ADAMS Advanced Search query format, since it is not looking for a phrase that appears in the text of documents.

Working query - **Query link**

Query formatted for screen display

```
http://adams.nrc.gov/wba/services/search/advanced/nrc?q=(
     mode:sections,sections:(
        filters:(
              public-library:!t
              ),options:(
              within-folder:(
                   enable:!f,insubfolder:!f,path:''
              )
        ),properties_search_all:!(
              !(DocumentType,starts,'inspection+report',''),
              !(DocketNumber,starts,'05000',''),
              !(PublishDatePARS,range,(
                   left:'04/01/2013+12:00+AM',
                   right:'05/01/2013+11:45+PM'
                   ),''
              )
        )
     )
)&qn=New&tab=advanced-search-pars&s=%24title&so=ASC
```

Appendix A: Document Properties

Property	Type	Description
AccessionNumber	String	A unique system-generated number assigned to a document
AddresseeAffiliation	String	The name of the company or organization with which the Addressee is associated
AddresseeName	String	The name of the individual to whom the document was written
AuthorAffiliation	String	The name of the company or organization with whom the author is associated
AuthorName	String	The name if the individual(s) who approved the document or who is listed on the title page of the publication
CaseReferenceNumber	String	The unique identifier that refers to a specific action or identification of a document or package and is applied to all related documents and associated records
DocketNumber	String	An NRC-assigned number that uniquely identifies a facility, licensee, or activity
DocumentDate	Date mm/dd/yyyy	The date of the document
DocumentReportNumber	String	A unique number used to identify and retrieve the actual document. This number will include any of its derivatives, such as the new edition, revision, supplement, or errata data.
DocumentType	String	An indicator of a specific type of document. For example, an NRC Bulletin, Contract, or SECY Paper
Keyword	String	Unique Information and keywords used to describe a specific document or package
LicenseNumber	String	An NRC- or State-assigned number that uniquely identifies an NRC or an agreement state license or permit holder
PackageNumber	String	A unique system-generated number assigned to an ADAMS Package, which contains one or more documents
PackageNumber	String	A unique system-generated number assigned to an ADAMS Package, which contains one or more documents
PublishDatePARS	Date mm/dd/yyyy	The date the document was added to the ADAMS PARS (Public) library
$title	String	A brief description of the subject and/or contents of a document

Appendix B: Search Operators

Search Operators for Text Properties

Operator Name	Content Search Operator	Advanced Search Operator
Equal To	ends	eq
Not Equal To	not	not
Starts With	--	starts
Does Not Start With	--	not_starts
Includes	infolder	contains
Does Not Include	--	not_contains

Search Operators for Date Properties

Operator Name	Content Search Operator	Advanced Search Operator
Equal To	eq	eq
Less Than	lt	lt
Less Than or Equal To	--	le
Greater Than	gt	gt
Greater Than or Equal To	--	ge
Between	range	range

Search Operators by Property

Property	Content Search Operators	Advanced Search Operators
AccessionNumber	eq, not, infolder, ends	starts, not_starts, eq, not, infolder, ends
AddresseeAffiliation	eq, not, infolder, ends	starts, not_starts, eq, not, infolder, ends
AddresseeName	eq, not, infolder, ends	starts, not_starts, eq, not, infolder, ends
AuthorAffiliation	eq, not, infolder, ends	starts, not_starts, eq, not, infolder, ends
AuthorName	eq, not, infolder, ends	starts, not_starts, eq, not, infolder, ends
CaseReferenceNumber	eq, not, starts, ends, not_starts	starts, not_starts, contains, not_contains, eq, not
DocketNumber	eq, not, infolder, ends	starts, not_starts, eq, not, infolder, ends
DocumentDate	eq, gt, lt, range	eq, not, gt, ge, lt, le, range
DocumentReportNumber	eq, not, Infolder, ends	starts, not_starts, contains, not_contains, eq, not
DocumentType	eq, not, infolder, ends	starts, not_starts, eq, not, infolder, ends
Keyword	eq, not, infolder, ends	starts, not_starts, eq, not, infolder, ends
LicenseNumber	eq, not, infolder, ends	starts, not_starts, eq, not, infolder, ends
PackageNumber	eq, not, infolder, ends	starts, not_starts, eq, not, infolder, ends
PackageNumber	eq, not, infolder, ends	starts, not_starts, eq, not, infolder, ends
PublishDatePARS	eq, gt, lt, range	eq, not, gt, ge, lt, le, range
$title	eq, not, starts, ends, not_starts	starts, not_starts, contains, not_contains, eq, not

Appendix C: Relationships among Document Properties, Search Properties, and the XML Result Set

The following table depicts the relationships among the various document properties and their values in the corresponding search parameter names and XML result set tags. As shown below, only a subset of the document properties is available for use as search criteria.

Document Property	Search Property	XML Property Tag	Type	Comments
Mime Type	--	MimeType	String	Document MimeType. Example: `application/pdf`
Estimated Page Count	--	EstimatedPageCount	Integer	Estimated document page count
Case Reference Number	CaseReferenceNumber	CaseReferenceNumber	String	
Content Size	--	ContentSize	Integer	
Author Affiliation	AuthorAffiliation	AuthorAffiliation	String	
Keyword	Keyword	Keyword	String	Keywords separated by a comma (,)
Document Date	DocumentDate	DocumentDate	Date	
License Number	LicenseNumber	LicenseNumber	string	
Docket Number	DocketNumber	DocketNumber	string	
Accession Number	AccessionNumber	AccessionNumber	string	
Package Number	PackageNumber	PackageNumber	String	Package Number
Publish Date PARS	PublishDatePARS	PublishDatePARS	Date	Date Added in WBA
Document Title	$title	DocumentTitle	String	$title also appears in the $sort field in the XML object returned
Document Report Number	DocumentReportNumber	DocumentReportNumber	String	
Document Type	DocumentType	DocumentType	String	The Document Type
Author Name	AuthorName	AuthorName	String	
Compound Document State	--	CompoundDocumentState	Boolean	If true, this is a compound document
Addressee Affiliation	AddresseeAffiliation	AddresseeAffiliation	String	
Addressee Name	AddresseeName	AddresseeName	String	
Web Address	--	URI	URI	This is the URI for the document
Microform Addresses	--		String	Microform addresses
Comment	--		String	Comment property for the document
Related Date	--		Date	Related Date

Appendix D: Sample XML Result Set

This is a representative sample of document properties and associated values returned by the API in XML format, since not all document properties are found in any document. See Appendix C for a complete list of document properties.

```
<?xml version="1.0" encoding="UTF-8" ?>
- <search>
<query>http://adams.nrc.gov/wba/services/search/advanced/nrc?q=%28mode%3Asections%2Csections%3A%28filters%3A%28public-library%3A%21t%29%2Coptions%3A%28within-folder%3A%28enable%3A%21t%2Cinsubfolder%3A%21f%2Cpath%3A%27%27%29%29%2Cproperties_search_all%3A%21%28%21%28DocumentType%2Cstarts%2C%27inspection+report%27%2C%27%27%29%2C%21%28DocketNumber%2Cstarts%2C%2705000%27%2C%27%27%29%2C%21%28DocumentDate%2Crange%2C%28left%3A%2704%2F01%2F2013%27%2Cright%3A%2704%2F15%2F2013%27%29%2C%27%27%29%29%29%29&qn=New&tab=advanced-search-pars&s=%24title&so=ASC</query>
<requesttime>20130515113259 -0400</requesttime>
<matches />
<sort>$title</sort>
<sortorder>ASC</sortorder>
<count>24</count>
- <resultset>
- <result number="1">
<MimeType>application/pdf</MimeType>
<EstimatedPageCount>14</EstimatedPageCount>
<ContentSize>117,745</ContentSize>
<AuthorAffiliation>NRC/RGN-II/DRP/RPB</AuthorAffiliation>
<Keyword>rls1, SUNSI Review Complete, utsPAR</Keyword>
<DocumentDate>04/04/2013</DocumentDate>
<LicenseNumber>NPF-03</LicenseNumber>
<DocketNumber>0500041</DocketNumber>
<AccessionNumber>ML13095A205</AccessionNumber>
<PublishDatePARS>04/08/2013 08:54 AM EDT</PublishDatePARS>
<DocumentTitle>Catawba Supplemental Inspection Report 2013008 and Assessment Follow up Letter.</DocumentTitle>
<DocumentType>Inspection Report, Lette</DocumentType>
<AuthorName>Bartley J</AuthorName>
<DocumentReportNumber>IR-13-00</DocumentReportNumber>
<CompoundDocumentState>false</CompoundDocumentState>
<AddresseeAffiliation>Duke Energy Cor</AddresseeAffiliation>
<AddresseeName>Henderson</AddresseeName>
<URI>http://adams.nrc.gov:80/wba/view?action=view&actionId=view&ids=[{"documentId":%7B%22properties%22%3A%7B%22%24os%22%3A%22ADAMSPublicOS%22%2C%22%24is_compound%22%3Afalse%2C%22ce_o
```

bject_id%22%3A%22%7B9FEA9EC8-2816-4F46-B270-8117C60D0A62%7D%22%7D%2C%22dataProviderId%22%3A%22ce_bp8os_repository%22%2C%22compound%22%3Afalse%7D}]&mimeType=application/pdf&docTitle=Catawba Supplemental Inspection Report 2013008 and Assessment Follow up Letter.</URI>
    </result>
- <result number="2">
    . . .
    </result>
    . . .
    </resultset>
  </search>

Appendix E: NRC Docket Numbers

A ***docket number*** is an NRC-assigned number that uniquely identifies a facility, licensee, or activity.

A list of docket numbers for the U.S. operating nuclear power, research, and test reactors is available at http://www.nrc.gov/reactors/operating/project-managers.html.

Appendix F: Document Types

A ***document type*** is an indicator of a specific type of document. For example, an NRC Bulletin, Contract, or SECY Paper.

2.206 Acknowledgment Letter
2.206 Director Decision
2.206 Petition
Acceptance Review Letter
ACQ-Amendment of Solicitation/Modification of Contract, SF Form 30
ACQ-Contract
ACQ-Contract Closeout (Final Notice Letter)
ACQ-Contract Deliverable
ACQ-Contract Execution Correspondence
ACQ-Contract Final Report
ACQ-Contract Modification
ACQ-Contract Modification Execution Correspondence
ACQ-Contract Monthly Status Report
ACQ-Contract Solicitation
ACQ-Contract Status Report
ACQ-Contract Task Order
ACQ-Contract Task Order Modification
ACQ-Cooperative Agreement
ACQ-Cooperative Agreement Modification
ACQ-Correspondence
ACQ-Evaluation Worksheet
ACQ-Grant
ACQ-Grant Modification
ACQ-Interagency Agreement
ACQ-Interagency Agreement Status Report
ACQ-Invitation For Bid (IFB)
ACQ-Invoice
ACQ-Notice to Unsuccessful Offeror
ACQ-Pre-award Correspondence
ACQ-Pre-award Correspondence/Protests
ACQ-Presolicitation Document
ACQ-Proposal for Contract, Grant, Agreement
ACQ-Proposal for Modification to Task Order
ACQ-Proposal for Purchase Order
ACQ-Proposal for Task Order
ACQ-Purchase Order
ACQ-Purchase Order Modification
ACQ-Purchase Order Presolicitation Document
ACQ-Request For Proposal (RFP)

ACQ-Request For Quotation (RFQ)
ACQ-Request for Quotation, SF Form18
ACQ-Solicitation Amendment
ACQ-Solicitation, Offer and Award, SF Form 33
ACQ-Solicitation/Contract/Order for Commercial Item, SF FORM 1449
ACQ-Supporting Documentation for Contract, Grant, or Agreement Modification
ACQ-Supporting Documentation for Purchase Order Modification
ACQ-Supporting Documentation for Task Order
ACRS Background Information
ACRS Consultant Report
ACRS Meeting Notebooks
ACRS Most Favored Paragraphs
ACRS Status Report
ACRS Summary Report
ADM Ticket
Administrative Form, GSA
Administrative Form, NRC
Administrative Form, SF
Advance Procurement Plan
Advisory Report
Agreement Request
Agreement States
Agreement States-Regulations Review
Agreement to Transfer Records to the National Archives of the United States, SF Form 258
All Agreement States Letter
Annual Operating Report
Annual Report
Audio File
Audit Plan
Audit Report
Backgrounder
Bankcard Statement and Bankcard Voucher
Biweekly Notice Memoranda
Branch Technical Position
Brochure
Budget Assumptions

Budget Execution Report
Budget Planning and Estimates
Budget Planning Call
Budget, Draft
Budget, Final
Calculation
Capital Planning and Investment Control (CPIC)
Chairman Daily
Charter
Chilling Effect Letter
CNWRA Administrative Procedure
CNWRA Corrective Action Request
CNWRA Instrument Calibration Procedure
CNWRA Instrument Calibration Record
CNWRA Journal Article
CNWRA Procurement Record
CNWRA QA Nonconformance Report
CNWRA QA Surveillance Report
CNWRA Quality Assurance Procedure
CNWRA Reviewer Comments on Journal Article
CNWRA Reviewer Comments on Technical Reports
CNWRA Scientific Notebook and Supplemental Material
CNWRA Scientific Sample Custody Log
CNWRA Software Control Documentation
CNWRA Subcontractor/Consultant Statement of Work
CNWRA Technical Operating Procedure
CNWRA Technical Report
Code of Federal Regulations
Code Relief or Alternative
Codes and Standards
Commercial Contract Solicitation and Award Documents
Commission Action Memoranda (COM)
Commission Closed Meeting Documents
Commission Letter Ballot
Commission Meeting Agenda
Commission Meeting Transcript/Exhibit
Commission Notation Vote
Commission SECY Paper
Commission Staff Requirements Memo (SRM)
Commission Voting Record (CVR)
Committee Letter Report
Communication Plan
Conference Proceeding
Conference/Symposium/Workshop Paper

Confirmatory Action Letter (CAL)
Confirmatory Order
Congressional Affairs Memorandum
Congressional Correspondence
Congressional QAs
Congressional Testimony
Contract Solicitation Docs (RFPs, Invitation to Bid, Request for Qualifications)
Daily Event Report
Database File
Decommissioning Funding Plan DKTs 30, 40, 50, 70
Decommissioning Plan DKTs 30, 40, 50, 70
Deficiency Correspondence (per 10CFR50.55e and Part 21)
Deficiency Report (per 10CFR50.55e and Part 21)
Demand for Information (DFI)
Design Control Document (DCD)
Differing Professional Opinion Case File
Digital Certificate and Broadband User Agreements
Digital Signature/Certificate
DOE Corrective Action Request
DOE YMPO Standard Deficiency Report
Draft Safety Analysis Report (SAR)
Draft Safety Evaluation Report (DSER)
Drawing
E-Mail
EDO Procedure
EDO Procedure Change Notice
Emergency Preparedness-Emergency Plan
Emergency Preparedness-Emergency Plan and Post Exercise Evaluation
        (FEMA Evaluation)
Emergency Preparedness-Emergency Plan Exercise Objectives and Scenario
Emergency Preparedness-Emergency Plan Implementing Procedures
Emergency Preparedness-EP Position
Emergency Preparedness-FEMA Correspondence to NRC
Emergency Preparedness-NRC Correspondence to FEMA
Emergency Preparedness-Review of Emergency Plan Changes
Emergency Preparedness-Review of Emergency Plan Exercise Objectives
        and Scenario
Enforcement Action
Enforcement Action Worksheet
Enforcement Guidance Memorandum
Enforcement Manual
Enforcement Manual, Revision
Enforcement Notification
Enforcement Strategy

Enforcement Three Week Memo
Enforcement/Regulatory Conference Invitation/Reply
Enforcement/Regulatory Conference Transcript
Environmental Analysis Statement
Environmental Analysis Statement, Draft
Environmental Assessment
Environmental Impact Appraisal
Environmental Impact Statement
Environmental Monitoring Report
Environmental Protection Plan
Environmental Report
Environmental Report Amendment
Environmental Technical Specification
Equivalent/Clarification, Initial, NRC Form 241
Equivalent/Clarification, NRC Form 241
Equivalent/Clarification, Revision, NRC Form 241
Evacuation Time Estimate/Report (ETE)
Event Report from State
Exemption from NRC Requirements
Exercise of Enforcement Discretion
ExTRA
Facility Safety Evaluation Report
Facsimile
FACT Sheet
Federal Register Notice
Final Safety Analysis Report (FSAR)
Final Safety Evaluation Report (FSER)
Financial Assurance Document
Financial Assurance Package
Finding of No Significant Impact
Fire Protection Plan
FOIA/Privacy Act Background
FOIA/Privacy Act Request
FOIA/Privacy Act Response to Requestor
Foreign Report
Fuel Cycle Reload Report
Fundamental Nuclear Material Control Plan (FNMCP)
General FR Notice Comment Letter
General License Periodic Reports
General Licensee (GL) Registration Form
General Licensee Change Notifications
General Notice (in the Federal Register)
Generic DCD Departures Report
Graphics incl Charts and Tables

Handbook
Highlights
IAEA Safety Guide
Independent Government Cost Estimate - NRC Form 554
Individual Action (Enforcement)
Individual Response to Enforcement Action
INPO Event Report Level 1 (IER 1)
INPO Event Report Level 2 (IER 2)
INPO Event Report Level 3 (IER 3)
INPO Event Report Level 4 (IER 4)
INPO Operations and Maintenance Reminder (OMR)
INPO Significant Event Notification (SEN)
INPO Significant Event Report (SER)
INPO Significant Operating Experience Report (SOER)
INPO Topical Report (TR)
Inservice/Preservice Inspection and Test Report
Inspection Manual
Inspection Manual Change Notice
Inspection Plan
Inspection Report
Inspection Report Correspondence
Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC)
Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Closure
        Notification (ICN)
Integrated Material Performance Evaluation Program (IMPEP)-Agreement
        States
Integrated Safety Analysis (Plan/Summary/Revision/Update)
Interagency Agreement
International Agreements
International Correspondence, Outgoing
International Nuclear Events Scale (INES) Event Rating Form
Investigative Procedures Manual (IPM)
ITAAC Closure Verification Evaluation Form (VEF)
Journal Article
Legal-Affidavit
Legal-Board Establishment
Legal-Board Notification
Legal-Brief
Legal-Correspondence
Legal-Correspondence/Miscellaneous
Legal-Decision (Partial or Initial)
Legal-Deposition
Legal-Discovery Material
Legal-Discovery Report

Legal-Exhibit
Legal-Final Agency Action Letters and Memoranda
Legal-Finding of Fact/Conclusions of Law
Legal-Hearing File
Legal-Hearing File (For Informal Hearings)
Legal-Hearing Request Referral Memorandum
Legal-Hearing Transcript
Legal-In Camera Filing
Legal-Insurance/Indemnity Document
Legal-Interrogatories and Response
Legal-Intervention Petition, Responses and Contentions
Legal-Limited Appearance Statement
Legal-Memorandum and Order
Legal-Memorandum of Agreement/Understanding
Legal-Motion
Legal-Narrative Testimony
Legal-Notice of Appearance
Legal-Notice of Deposition
Legal-Notice of Hearing
Legal-Notices of Hearing or opportunity for
Legal-Order
Legal-Panel/Board Issuance
Legal-Party Contentions and Associated Pleading
Legal-Petition for Rulemaking
Legal-Petition to Intervene
Legal-Petition To Intervene/Request for Hearing
Legal-Pleading
Legal-Pre-Filed Exhibits
Legal-Pre-Filed Testimony
Legal-Privilege Logs
Legal-Proposed Finding drafted by Parties
Legal-Proposed Finding of Fact and Conclusions of Law
Legal-Public Comment
Legal-Report
Legal-Stipulation/Agreement
Letter
License Fee Requirements Letter
License-Application for (Amend/Renewal/New) for DKT 30, 40, 70
License-Application for Certificate of Compliance (Amend/Renewal/Rev) DKT 71 QA Program
License-Application for Combined License (COLA)
License-Application for Construction Permit DKT 50
License-Application for Design Certification
License-Application for Dry Cask ISFSI DKT 72

License-Application for Early Site Permit (ESP)
License-Application for Export License
License-Application for Facility Operating License (Amend/Renewal) DKT 50
License-Application for HLW Part 63
License-Application for Import License
License-Application for License (Amend/Renewal/New) DKT 40
License-Application for License (Amend/Renewal/New) DKT 70
License-Application for Registry of Sealed Source or Device (Amend/Renewal)
License-Approval for (Amend/Renewal/New) License for DKT 40, 70
License-Approval for MATL Byproduct License (Amend/Renewal/New) DKT 30, 40, 70
License-Certificate of Compliance (Dkt 71)
License-Certificate of Disposition of Materials
License-Combined License (COL)
License-Denial for (Amend/Renewal/New) License for DKT 40, 70
License-Dry Cask, ISFSI, (Amend) DKT 72
License-Early Site Permit (ESP)
License-Exempt Distribution Report
License-Export License Amendment
License-Fee Sheet
License-Fitness for Duty (FFD) Performance Report
License-Fuel Facility Event Evaluation Report
License-General License Notification
License-Import License Amendment
License-Materials Byproduct Amendment DKT 30
License-Monthly Operating Report
License-Negative Declaration of Quality Management Program (QMP) DKT 30
License-No Significant Hazards Consideration Determination and Noticing Action
License-Not elsewhere specified
License-Notification of Authorized Users
License-Operating (New/Renewal/Amendments) DKT 50
License-Operator Examination Report
License-Operator Examination Report (Non-Power Reactors Only)
License-Operator License Exam, Draft
License-Operator, Form 396, Certification of Medical Examination
License-Operator, Form 398, Personal Qualification Statement
License-Operator, Form 474, Simulation Facility Certification
License-Operator, Other HQ and Regional Correspondence
License-Operator, Part 55 Examination Related Material
License-Operator, Report on Interaction (ROI)
License-Operator, Requalification Program Audit

License-QA Program Approval for Radioactive Materials Packages
License-Quality Management Program
License-Registration Certificate for In-Vitro Testing (NRC Form 483)
License-Registry of Sealed Source or Device (New/Amend/Renewal)
License-Renewal, Report on Interaction (ROI)
License-Source Material Amendment DKT 40
License-Special Nuclear Material Amendment DKT 70
License-Technical Assistance Request (TAR)
License-Technical Assistance Request (TAR), Reply to
Licensee 30-Day Written Event Report
Licensee Event Report (LER)
Licensee Performance Review
Licensee Response to Enforcement Action
Licensee Response to Notice of Violation
Limited Work Authorization (LWA) Request
Logbook
Low-Level Waste Manifest Shipping Paper
Management Directive
Manual
Map
Media Briefing Paper
Medical Misadministration Report
Meeting Agenda
Meeting Briefing Package/Handouts
Meeting Minutes
Meeting Notice
Meeting Summary
Meeting Transcript
Memoranda
Monthly SUNSI/SGI Notice Memoranda
Morning Report
MPKI Log
News Article
Newsletter
NMSS Administrative/Management
Non-Agreement States
Non-Cited Violation
Non-Concurrence Process
NON-SES Performance Appraisal System Performance Plan
Note
Note to File incl Telcon Record, Verbal Comm
Notice of Deviation
Notice of Enforcement Discretion (NOED)
Notice of Interagency Meeting

Notice of Non-Conformance
Notice of Return Check
Notice of Violation
Notice of Violation with Proposed Imposition of Civil Penalty
NPDES Noncompliance Notification
NPDES Permit
NRC Administrative Letter
NRC Bulletin
NRC Bulletin, Draft
NRC Circular
NRC Generic Letter
NRC Generic Letter, Draft
NRC Information Notice
NRC Policy Statement
NRC Preliminary Notification of Event/Occurrence
NRC Regulatory Issue Summary
NRO Office Instruction
NRO Safety Evaluation Report (SER)-Delayed
NRR Office Instruction
NRR Office Letter
NUREG
NUREG, Draft
Occupational Exposure Record
OCFO Fee Policy Documentation
OE Annual Report
Official FACA Record for ACRS Meetings
OI Investigation Report
OIG Audit Report
OIG Audit Report Comment
OIG Audit Resolution
OIG Event Inquiry
OMB Clearance Material
OpE Notes and POE
Operating Plan
Operating Procedures
Operating Report
Operating Report, Monthly
OperatingExperience (OpE) Communication
Operational Experience Reports by RES
Order
Order Imposing Civil Monetary Penalty
Order Modifying License
Order Prohibiting
Order Revoking License

Order Suspending License
Order, Confirmatory
Organization Chart
Part 21 Correspondence
Performance Indicator
Performance Plan
Performance Planning and Appraisal (SES)
Periodic Monitoring Report (Radiological/Environmental)
Photograph
Planning Call
Plant Issues Matrix
Plant Performance Review
Plant Status Report
Policy and Program Guidance
Policy Statement
Post-Shutdown Decommissioning Activities Report
Pre-decisional Contract Action
Preliminary Safety Analysis Report (PSAR)
Press Release
Privacy Impact Assessment
Privacy Threshold Analysis
Probabilistic Risk Assessment
Program Review
Project Manager (PM) List
Project Plans and Schedules
Project Requirement Document
Proprietary Information Review
Quality Assurance Program
Radiation Overexposure Reports
Records Retention and Disposal Authorization
Records Transmittal and Receipt, SF Form 135
Reference Safety Analysis Report
Reference Safety Analysis Report, Amendment
Regulatory Analysis
Regulatory Guidance
Regulatory Guide
Regulatory Guide, Draft
Report of Proposed Activities in Non-Agreement States, NRC Form 241
Report, Administrative
Report, Miscellaneous
Report, Technical
Request for Access Authorization
Request for Additional Information (RAI)
Request for OMB Review

Request for Procurement Action (RFPA), NRC Form 400
Request for Review of OMB Reporting Requirements
RES Office Letter
Research Information Letter (RIL)
Resume
Reviewer Comments on Conference/Symposium/Workshop Paper
Route Approval Letter to Licensee
Routine Status Report (Recurring Weekly/Monthly)
Rulemaking- Final Rule
Rulemaking- Proposed Rule
Rulemaking-Authority Statement for EDO Signature
Rulemaking-Comment
Rulemaking-Environmental Assessment
Rulemaking-Environmental Impact Statement
Rulemaking-Plan
Rulemaking-Regulatory Analysis
Rulemaking-Regulatory Plan
Safeguard Incident Report
Safeguards Advisory
Safety and Compliance Inspection Record, NRC Form 591
Safety Evaluation
Safety Evaluation Report
Safety Evaluation Report, Draft
Schedule and Calendars
Security Form-Report of Security Infraction, NRC Form 183
Security Form-Security Incident Report, NRC Form 135
Security Frequently Asked Question (SFAQ)
Security Incidence Report
Security Plan
Security Program
Senior Management Meeting (SMM) Results Letter
Significant Event Report
Site Access Letter
Site Characterization Plan
Site Redress Plan
Site Safety Analysis Report (SSAR)
Slides and Viewgraphs
Social Media-Photograph
Social Media-Video Recording
Software Control Documentation
Software Documentation
Space Management
Space Policy
Special Nuclear Material Physical Inventory Summary Report

Speech
Spreadsheet File
Standard Review Plan
Standard Review Plan Update
Standard Technical Specification incl Change Review Agreement Response
Startup Test Report
State Agreement Application
State Agreement Program Transmittal
Statement of Work
Status Report
Strategic Plan
System Documentation
Task Action Plan
Task Interface Agreement Response (TIA)
Technical Paper
Technical Specification, Amendment
Technical Specification, Bases Change
Technical Specifications

Template
Test/Inspection/Operating Procedure
Text-Safety Report
Threat Advisory
Topical Report
Topical Report Evaluation
Training Evaluation
Training Manual
Transcript
Transportation Route Approval
Trip Report
Updated Final Safety Analysis Report (UFSAR)
User Agreements
Video Recording
Weekly Activities/LEAP (WAR)
Weekly Information Report
Yellow Announcement