

# PBJ 1.0 Data Submission Specifications Overview

## Version 1.00

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# PBJ 1.0 Data Submission Specifications Overview

## Version 1.00

### 1 Introduction

Version 1.0 of the Payroll Based Journal (PBJ) will be implemented on October 1, 2015. Data submission specifications have been developed to support the PBJ. This document details these new data submission requirements. **All users planning to submit PBJ data via the XML format must read through this document carefully.** There are four different sections of data defined for the PBJ XML files, and a fatal error in any of the sections will result in the entire file being rejected.

Note that PBJ XML files **must** be compressed into a ZIP file to be submitted. **The PBJ system will process only ZIP files.** Any submitted file that is not a ZIP file will be rejected.

The following rules must be followed for naming XML and ZIP submission files:

1. File names for ZIP files cannot exceed 260 characters, including the file extension. A file extension of “.zip” is required.

File names for XML files cannot exceed 260 characters, including the file extension. A file extension of “.xml” is recommended, but is not required.

### 2 Version History

The table below summarizes the versions of the data submission specifications that have been released along with their effective dates.

**Table 1: Data Submission Specifications Version History**

Data Specs Version	Effective Start Date	Effective End Date
1.00	10/01/2015	N/A

### 3 Version Implementation

Each published version of the data specifications has a version number which is formatted as N.NN.NN (e.g., “1.00.1”). The first portion of the version number (e.g., “1.00”) is referred to as the major version number, and the last portion (e.g., “.1”) is referred to as the minor version number. The major version number is incremented whenever there is a substantive change to the data specifications that requires software changes. Minor version numbers are incremented when minor changes or corrections are made to a major version.

When a new major version of the data specs is published, it will have an associated starting effective date. The version that is in effect when the new specs are published will have an ending effective date on the day before the new version takes effect.

For example, Version 1.00 will be the initial version of the PBJ data specs. It will have a starting effective date of 10/01/2015. If a new major version of the data specs, Version 1.01, is published and has a starting effective date of 04/01/2016, then Version 1.00 will end on the previous day: 03/31/2016.

The item “fileSpecVersion” determines which version of the data specs applies to the data within the submission file. When a submitted file is validated by the PBJ system, the “fileSpecVersion” value is used

to load the matching specifications. If the data within the submitted file does not conform to those specifications, the appropriate warnings or error messages will be issued and the file may be rejected. Using V1.00 and the hypothetical V1.01 as examples, if a PBJ submission file contains data occurring on or before 03/31/2016, then the data within the file should conform to V1.00. If the data within the file occurs on or after 04/01/2016, then it must conform to V1.01.

Once a new version of the data specs takes effect, data submission software will typically have to handle records from the previous version (or versions) and the new version. That software must therefore determine which version of the specifications applies, and use those specifications to validate the record prior to submission. Failure to do this may result in warnings, fatal errors, or unexpected results.

For example, suppose that a new PBJ item is defined and activated in a new version of the data specifications. If that new item is submitted for a record with a “fileSpecVersion” value that precedes the new version of the specs, then a fatal error will occur and the file will be rejected. Furthermore, if the new item is omitted from a record with a “fileSpecVersion” value that is on or after the effective date of the new specs, then a fatal error will occur and the record will be rejected. This will occur because the PBJ system will apply the new version of the specs and determine that the new item was not submitted when it was required.

The PBJ system enforces version control on the set of items that must be submitted for a given item subset (item subsets are discussed in more detail later in this document). This means that if a new PBJ item is added to one or more sections in a version of the data specs, then that item must be submitted for records with the “fileSpecVersion” value equal to that version. As noted above, failure to do so will result in a fatal error and in record rejection. However, with rare exceptions, edits are not versioned by PBJ. Thus, if a new version of the data specs implements a new or revised edit for an item or items, that edit will be effective for all records containing the item(s), regardless of “fileSpecVersion” value, that are submitted after the new version of PBJ is installed.

To understand this, consider the following two examples:

- In August, a new version of PBJ is installed which implements a new set of data specifications effective for October 1 of that year. This new version of the data specs includes a new consistency edit which tightens the logic between items A and B. Items A and B are unchanged by the new specs version; only the consistency logic has changed. In this case, the new edit will apply to all records that contain items A and B and that are submitted on or after the August installation date. In other words, the edit is effective retroactively.
- In the same version of the data specifications described above, a new item (item C) is added effective October 1. A new edit is also added which describes the logic between existing item A and the new item C. Technically, this edit is also effective on the day in August that PBJ is installed. However, edits only apply to items that are active on a particular record. Since item C will never occur on a record before October 1, the edit will never “fire” before October 1. Thus, as a practical matter, the new edit that involves item C won’t become effective until October 1 when item C becomes active.

On rare occasions, new edits will not be retroactive and will apply only to certain target date ranges. When this occurs, it will be noted in the data specs.

## 4 Components of the PBJ Specifications

The PBJ Specifications consist of the following primary components:

**Items.** PBJ items are the data elements in the specifications.

- Each item has several properties: a name to be used for tagging it in XML, an item type (e.g., text, date), and a defined set of valid values consistent with the item type.
- PBJ items are labeled in the specifications the same way as they are used for tags within the PBJ XML submission files. If the item label is a single word, then the

word is the label in lower case (e.g., the item “medicare”). However, if the item label consists of one or more words, then all subsequent words after the first word are capitalized (e.g., the item “fileSpecVersion”). Note that there are no spaces or other delimiters between the words.

- An Item Subset Code (ISC) is used to describe the section to which an item belongs in a PBJ submission file. There are four possible ISCs: Header (HDR), Employee (EMP), Staffing Hours (STF) and Census (CNS). While most items belong to a single ISC, there are a few items that belong to more than one.

**Edits.** For each PBJ item, there are associated validation edits which will be applied to the item during the PBJ submission process.

- Each edit has a unique ID, and that ID will be used to report any errors triggered by the edits when the PBJ system processes a submission file. Note that the same edit can be applied to multiple items, where applicable.
- There are three categories of edits currently defined in the specifications: Format, Consistency and Information. A Format edit verifies that the incoming data matches the data type of the item, e.g., an edit for a date value that confirms that the value is in YYYY-MM-DD format. A Consistency edit checks that the relationship of the values of two or more items is valid, e.g., an edit that confirms that the date value for a termination date is later than the date value for a hire date. An Information edit provides additional information about the properties of an item or in its processing, e.g., the Software Product Version is an optional item in the Header section.

**Submission file format.** The PBJ system uses submission files in Extensible Markup Language (XML). Each submission file must contain a Header section and some combination of Employee, Staffing Hours and Census sections. The XML tags that are used to identify the data for each item will correspond to the item labels described above. Thus, if item workTypeCode (Work Type Code) has a value of “1” (Full Time), the tag would look like this:

```
<workTypeCode>1</workTypeCode>
```

The XML file structure will be described in greater detail in a later section of this document.

## 5 Data Specifications Files

Two sets of files are included in the data specifications. The first set consists of reports and documentation that describe the data specifications. The second set is based upon the data dictionary that was used to generate the data specifications. This latter set of files will be useful to software developers. Note that in the file names below, *vn.nn.r* stands for the version and revision number associated with the data specifications. The *vn.nn* portion represents the version number, while *.r* represents the revision number. For example, *1.00.0* would be the initial release of Version 1.00. The first revision would be 1.00.1, the second would be 1.00.2, etc. In addition, the file names for draft versions of the documents will contain the word “draft” after the version number.

### 5.1 Reports and Documentation

**PBJ data specs overview (vn.nn.r).pdf** The current document.

**Data specs report (vn.nn.r).pdf** This report contains detailed data specifications for every item in the data set.

**Unduplicated edits by ID report (vn.nn.r).pdf** This report contains an unduplicated list of all edits (formatting rules, consistency checks, etc.) that apply to the item set. It is sorted by the edit ID number.

**Item change report (vn.nn.r).pdf** This report lists changes that have been made to items or item responses since the previous release of the data specs. This report will not be produced for the initial release of the data specs, but will be included in subsequent releases.

**Edit change report (vn.nn.r).pdf** This report lists changes that have been made to edits since the previous release of the data specs. This report will not be produced for the initial release of the data specs, but will be included in subsequent releases.

**HTML data specs (vn.nn.r).zip** This zip file contains a set of HTML files that display the same information as is in the detailed data specs document. To use these files, unzip them to an empty folder and use a browser to open the file called INDEX.HTML. This will open a two-panel window. The left-hand panel can be used to navigate a list of the PBJ items or of the PBJ edits. When an item or edit is selected, the right-hand panel present detailed information about the entity that was selected. Hyperlinks allow easy navigation among items and edits. This provides a convenient alternative to the PDF version of the data specs.

## 5.2 Data Dictionary Files

**PBJ data dictionary tables (vn.nn.r).mdb** This is the Microsoft Access database that contains all of the PBJ data dictionary tables that were used to generate the reports listed above. Additional reports are also available in the database.

**itm\_mstr (vn.nn.r).csv** A comma-separated value file containing data from the itm\_mstr table in the data dictionary. This is the master item table that contains one record for each PBJ item.

**itm\_val (vn.nn.r).csv** A comma-separated value file containing data from the itm\_val table in the data dictionary. This table contains one record for every response option for each PBJ item. This table can also be used in a data dictionary when linked with the item master table described above. It could also be used to generate reports or screens containing the text of each item's response options.

The fields within each of these tables are described in Appendix A of this document.

## 5.3 Microsoft Access Reports

As noted above, one of the files that is distributed with the data specifications is the Microsoft Access database that contains the PBJ data dictionary. This database can be used to generate additional reports that are not distributed with the data specifications. The following is a brief description of these reports.

**Public: data dictionary report.** This report contains a description of each table and field that is part of the data specs data dictionary.

**Public: data specs report.** This is the same as the data specs report described above.

**Public: edit change.** This is the same as the edit change report described above.

**Public: item change report.** This is the same as the item change report described above.

**Public: item list by item.** This report is a simple list of all PBJ items, sorted in logical order.

**Public: item list by type.** This report is a simple list of all PBJ items, sorted by type (code, checklist, number, text, etc.).

**Public: item subset matrix.** This report lists each PBJ item along with the item subsets for which it is active and inactive.

**Public: item-response report.** The report lists each PBJ item along with its corresponding response options.

**Public: unduplicated edits by type.** This is an unduplicated list of edits, sorted by type (e.g., format, consistency).

## 6 Detailed Data Specifications Report

The Detailed Data Specifications Report contains at least one page for every item in the PBJ item set. Each item begins on a new page. The report is divided into five major sections:

1. Basic information

Item subsets for which the item is active and inactive

Allowable responses or values for the item

Fatal, warning and informational edits associated with the item.

Version notes describing changes to the item and the edits that apply to it. This will be applicable to specification releases after the initial release.

Each of these sections is described below.

### 6.1 Basic Item Information

The top section presents basic information about the item under the following headings:

**Item.** The item identifier (e.g., fileSpecVersion).

**Description.** A brief description of the item (e.g., “Specifications version code”).

**Item type.** Items are classified into the following types:

**Text.** Items are those that contain text (e.g., “employeeId”, the employee ID).

**Code.** Coded items are those that have a limited number of response options (e.g., “reportQuarter”, Reporting quarter, has four valid response options).

**Number.** Numeric items can contain a range of numeric values (e.g., “federalFiscalYear”, which can range from 2016 to 9999).

**Date.** Examples of date items include “hireDate” (hire date of an employee) and “terminationDate” (termination date of an employee).

**Max length.** This property shows the maximum number of characters or bytes that the submitted item may contain.

### 6.2 Item Subsets

The item subsets section contains two lines: active and inactive. These two lines list the ISC codes that apply to the item. For example, item “employeeId” has the following ISCs listed:

Active: EMP, STF

Inactive: HDR, CNS

This means that “employeeId” is active in the Employee and Staffing Hours sections and would therefore always be included in XML files containing those sections. It is inactive (not present) in the Header and Census sections and would not appear in XML files which only contained those sections.

### 6.3 Item Values

The table in the third section of the page lists the allowable values that may be submitted for the item. For example, four values are listed for item “reportQuarter”: 1, 2, 3, and 4. For each value, the text associated with the value is listed.

## 6.4 Item Edits

The table in the fourth section of the page lists the fatal, warning and information edits that are associated with the item. This table contains the following four columns:

**Edit ID.** Each edit has been assigned an edit ID code. The order of the edit IDs is arbitrary. These edit ID codes will be used on the feedback reports that are produced by the PBJ system. This makes it possible to directly relate an error or warning on the feedback reports with a specific edit in the data specifications.

Please note that *in the Detailed Data Specifications Report, edits are listed under every item to which they apply.*

A second report described below (the Unduplicated Edit Report), lists each edit only once and references all of the items that each edit applies to. This system of uniquely and unambiguously identifying edits is intended to assist developers in ensuring that all required edits are incorporated in their software.

**Edit Type.** As noted above, there are various types of edits which are described below.

**Format.** Format edits specify special rules for formatting item values.

**Consistency.** Consistency edits define logical constraints among multiple items.

**Information.** Information edits are currently used to identify items that can be optionally submitted.

**Severity.** The severity column describes the impact of violating the edit. There are two possible values:

**Fatal.** Violation of a fatal edit will result in rejection of the submitted XML file. Format edits are always fatal. Most consistency edits are fatal, but some are warnings.

**Warning.** Violation of a warning edit will result in a warning message on the user feedback report. However, a warning will not prevent the submitted data from being accepted and stored in the PBJ system.

**Edit Text.** This column contains the text of the edit. Note: The PBJ system edit text may vary slightly from the data specifications edit text.

## 6.5 Version Changes

The final section of the report lists any changes that were made to the item or the edit since the previous version of the data specs was released. This section will appear only for items where a change has been made. This section will not appear in the initial release of the data specifications, but will be included in subsequent releases.

## 7 Unduplicated Edit Report

As noted in the previous section, the Detailed Data Specifications Report lists all of the edits that are associated with each item in the PBJ data set. Because most edits apply to multiple items, there is a great deal of duplication on this report. For this reason, a second report is provided which lists each edit only once. The Unduplicated Edit Report lists each edit as well as the items that it applies to.

For each edit listed, the edit ID, type, and text of the edit are displayed. After this, the items to which the edit applies are listed.

This report should serve as a resource for developers who wish to insure that their software incorporates all required edits and that each of those edits is applied to the proper set of items.

## 8 Conventions Used in the Data Specification Reports

Certain conventions have been adopted in the data specification reports in order to make them clear and unambiguous. These conventions are described below.

On the Detailed Data Specifications report, the “Item Values” table lists all allowable values for each item. If a submission file contains any values other than those listed in this table, a fatal error will occur and the file will be rejected. Note that edits may constrain the list of allowable values based upon specific logic. However, it is never allowable to submit a value that is not listed in the “Item Values” table.

If the item is a numeric item, then the “Item Values” table will not list every individual value (because enumerating all possible values is not practical). Instead, the first two rows of the “Item Values” table will list the minimum and maximum allowable values. Restrictions on the values between the minimum and maximum values are listed in the edits for the item.

Where edits refer to values of an item, those values are always enclosed in brackets. The values contained within brackets should be understood to be character literals even though quotation marks have been omitted. Furthermore, when more than one value is listed, they are implicitly connected by a logical “OR”.

The item “jobTitleCode” contains a value selected from a list of job title codes belonging to labor categories. Appendix B contains a table with the mapping of labor categories to job title codes. Similarly, the allowed values for “payTypeCode” and “workTypeCode” are contained in Appendices C and D, respectively.

- Note that the labor categories themselves are not required in the submission file. The reason is that each job title code belongs to a single labor category, and the PBJ database will already contain these mappings.
- While labor categories are not required in the PBJ submission file, it is recommended that the software used to create the PBJ submission file allow users to navigate to job title codes by picking a labor category first.

## 9 XML File Structure

As noted above, PBJ data is collected using XML files. XML files must employ ASCII character encoding. Figure 1, below, shows how PBJ XML submission files MUST be structured.

The <nursingHomeData> beginning tag and the </nursingHomeData> ending tag are used to enclose the elements for individual items that belong to the PBJ data. These tags are required. The file must include the Header section (with the <header> and </header> tags). The other sections are optional; however, at least one of the other sections must be present. For example, a PBJ submission file could contain a Header section and a Census section only, or a Header section and a Staffing Hours section only.

For all tags representing items in the PBJ data, a value must be provided. Blank values are not acceptable, with one exception. The “terminationDate” item may be blank for a special situation. This is described later in the Hire Date and Termination Date Processing subsection.

**NOTE: PBJ submission files MUST follow the tree structure documented in Figure 1. The Header section must be provided, and a valid value for “fileSpecVersion” MUST be provided in the <header> tag. All subsequent sections, when included, MUST appear in the order presented, or the file will be rejected. For example, the Census section cannot appear before any other section.**

Within sections, one or more subsections can be included in a PBJ submission file. In Figure 1, only one employee is included in the Employees section. However, many employees may be included as Employee subsections, as long as their data is enclosed with the <employee> and </employee> tags. Another example is in the Staffing Hours section, which is enclosed by the <staffingHours> and </staffingHours> tags. Any number of employees and their work hours can be included, as long as each employee and their associated hours are enclosed in the <staffHours> and </staffHours> tags.

The tag for each item corresponds to the item IDs that are listed in the Detailed Data Specifications Report, except for tags serving as subsections of the XML tree only. For example, there is no item in the data specs for the tag “staffHours”, because no value is collected for it.

Dates must be submitted in YYYY-MM-DD format.

Note that for all items, leading and trailing blanks will be trimmed. In addition, alphabetic text in any item (such as “softwareProductName”) may be submitted in upper, lower, or mixed case. The PBJ system will convert alphabetic text except for the software vendor’s e-mail address (SFTWR\_VNDR\_EMAIL\_ADR) to upper case without issuing any warnings. These converted values will be used on submission feedback reports and other database reports. Thus, users should be aware that even if a text item (such as “softwareProductName”) is submitted as a lower case string or with leading or trailing blanks, it will appear trimmed and in upper case in the feedback reports.

If the value of an item in the XML file exceeds the maximum length of the item, the item is not parsed and a fatal error is issued. Some PBJ items (such as “softwareProductName”) can contain special characters, such as apostrophes. A properly formatted XML file may encode these characters using “entity references”. For example, the name “O’NEAL” can be encoded using the “&apos;” entity reference which substitutes for the apostrophe. If this entity reference is used, the name would be encoded as “O&apos;NEAL”.

The PBJ system’s use of entity references follows existing XML standards. According to these standards, entity references are required for the less-than and ampersand symbols, but are optional for three other special characters (the greater-than, apostrophe, and quotation-mark symbols). Thus, the last name “O’NEAL” may be submitted either as “O’NEAL” or as “O&apos;NEAL”. Note that if an entity reference is used, it must be lower case; using upper case or mixed case characters may result in XML parsing errors or unexpected results.

It is possible that such an item, in its raw, XML form before it is parsed, could violate PBJ edits. For example, a string such as “O&apos;NEAL” could be longer than the maximum allowed length for an item or might contain characters (such as the ampersand) that are not allowed for the item. Such items **are** accepted, however, because the edits are applied **after** the XML file is parsed. The parsing converts the XML coding of the special characters to the desired character.

Figure 1: Example PBJ XML File

```

<?xml version="1.0" encoding="ASCII"?>
  <nursingHomeData xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation="nhpbj_1_00_0.xsd">
    <header fileSpecVersion="1.00.0">
      <facilityId>fac1234</facilityId>
      <stateCode>IA</stateCode>
      <reportQuarter>3</reportQuarter>
      <federalFiscalYear>2015</federalFiscalYear>
      <softwareVendorName>CMS</softwareVendorName>
      <softwareVendorEmail>help@qtso.com</softwareVendorEmail>
      <softwareProductName>Timecard Software</softwareProductName>
      <softwareProductVersion>1.4.2</softwareProductVersion>
    </header>
    <employees>
      <employee>
        <employeeId>EM123456</employeeId>
        <hireDate>2010-02-15</hireDate>
        <terminationDate>2015-05-15</terminationDate>
        <workTypeCode>2</workTypeCode>
        <payTypeCode>3</payTypeCode>
      </employee>
    </employees>
    <staffingHours processType="merge">
      <staffHours>
        <employeeId>EM123456</employeeId>
        <workDays>
          <workDay>
            <date>2015-04-01</date>
            <hourEntries>
              <hourEntry>
                <hours>5.84</hours>
                <jobTitleCode>5</jobTitleCode>
              </hourEntry>
              <hourEntry>
                <hours>2.2</hours>
                <jobTitleCode>7</jobTitleCode>
              </hourEntry>
            </hourEntries>
          </workDay>
        </workDays>
      </staffHours>
    </staffingHours>
    <census processType="replace">
      <month>
        <monthEndDate>2015-04-30</monthEndDate>
        <medicaid>50</medicaid>
        <medicare>60</medicare>
        <other>10</other>
      </month>
    </census>
  </nursingHomeData>

```

**Section processing control.** Note the use of the item “processType” within the <staffingHours> and <census> tags. This item is used to control how the data within these sections will be processed. There are two possible values for “processType”: “merge” and “replace”.

If “processType” is set to the value “merge”, then the data within that section will be processed as follows:

If no previous data exists for the specific lookup appropriate to the section (i.e., employee identifier and date for the Staffing Hours section, month end date for the Census section), the data will be added to the PBJ database.

If previous data does exist for the specific lookup appropriate to the section (i.e., employee identifier and date for the Staffing Hours section, month end date for the Census section), the data will overwrite that existing data stored in the PBJ database.

If “processType” is set to the value “replace”, then the data provided in the PBJ submission file will overwrite ALL previously submitted data for that section in the report quarter.

In Figure 1, the Staffing Hours section data, with the “merge” value for “processType”, will either be added for employee EM123456 or replace previously submitted staffing hours data for employee EM123456 on 04/01/2015. The Census section data, with the “replace” value for “processType”, will overwrite any existing census data for report quarter 3.

**NOTE:** Similar to “fileSpecVersion”, the “processType” item is **required** in order for the PBJ system to process the section to which it is applied. If a valid “processType” value is not provided, the PBJ submission file will be rejected.

In Figure 2, the optional items (the software items in the Header section and the termination date item in the Employee section) have been excluded. The “processType” value for the Staffing Hours section is now set to “replace”, which means that all the existing staffing hours data for the reporting quarter in the PBJ system database will be removed, and the data provided within the submission file will be added. Therefore, after this submission file is accepted by the PBJ system, the only staffing hours data for the reporting quarter will be for employee EM123456. Meanwhile, the “processType” value for the Census section is set to “merge”, which means that any previously existing data for the month of April 2015 will be replaced with the values provided. However, any previously existing census data for other months in the report quarter (i.e., May and June 2015) will remain in the database.

**Hire Date and Termination Date Processing.** For the Employee data section, all items associated with the section are required, with the exception of the item “terminationDate”. When this section is submitted, the PBJ system will look for the record with the matching “employeeId”. If no previous records exist for the employee in the PBJ database, then a new record will be created for the employee. However, if a match is found, then the following processing will occur:

- (1) The PBJ system will determine if the submitted “hireDate” matches the “hireDate” value for the employee in the PBJ database. If so, then the employee record will be updated with the rest of the information submitted in the Employee section.
- (2) If the submitted “hireDate” value does NOT match the value in the PBJ database, then the “hireDate” and other Employee section data will be updated as long as (a) a “terminationDate” value does not exist for the employee in the PBJ database, OR (b) the “hireDate” value is later than any “terminationDate” value that may exist in the PBJ database for the employee.
- (3) If the submitted “hireDate” value is before an existing “terminationDate” value for the employee in the PBJ database, the submission file will be rejected.

For example, in Figure 1, information for employee EM123456 is present, including a hire date and a termination date. Consider the following four scenarios:

- (1) The PBJ database has no information for employee EM123456. In this scenario, a new employee record will be created in the PBJ database with the data from the PBJ submission file.

- (2) The PBJ database already contains a single record for employee EM123456, including the same “hireDate” value of 2010-02-15, but no “terminationDate” value. In this scenario, the PBJ system will identify that the “employeeId” and “hireDate” from the PBJ submission file matches an existing record. Therefore, the other employee EM123456 items (“terminationDate”, “workTypeCode” and “jobTypeCode”) will be updated in the database with the values in the PBJ submission file.
- (3) The PBJ database already contains a single record for employee EM123456, but the “hireDate” value is different (e.g., 2010-03-15), and no “terminationDate” value is present. Since no “terminationDate” exists, the PBJ system will update all the employee EM123456 items (“hireDate”, “terminationDate”, “workTypeCode” and “jobTypeCode”) with the values in the PBJ submission file.
- (4) The PBJ database already contains a single record for employee EM123456, but the “hireDate” value is different (e.g., 2010-03-15), and a “terminationDate” value is also present (e.g., 2015-03-15). In this scenario, the PBJ submission file will be rejected because (a) a “terminationDate” value already exists, and (b) the value for “hireDate” in the PBJ submission file is earlier than the value for “terminationDate” in the PBJ database.

**NOTE:** There is a special case for the “terminationDate” item. If a previously submitted “terminationDate” value was incorrect (e.g., an employee record was submitted that indicated the employee had been terminated, but in reality was still employed at the facility), then it is possible to submit an update that clears the termination date field in the PBJ database. See Figure 3 below. Note the use of “nil” in the terminationDate tag: `<terminationDate xsi:nil="true">`. If this line is encountered in the submission file, the PBJ system will clear the termination date field in the PBJ database, assuming the “employeeId” was found in the PBJ database. **This is the only time that a submitted item may be left blank in a PBJ submission file.**

**Figure 2: Example PBJ XML File – Optional Items Excluded**

```

<?xml version="1.0" encoding="ASCII"?>
  <nursingHomeData xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation="nhpbj_1_00_0.xsd">
    <header fileSpecVersion="1.00.0">
      <facilityId>fac1234</facilityId>
      <stateCode>IA</stateCode>
      <reportQuarter>3</reportQuarter>
      <federalFiscalYear>2015</federalFiscalYear>
    </header>
    <employees>
      <employee>
        <employeeId>EM123456</employeeId>
        <hireDate>2010-02-15</hireDate>
        <workTypeCode>2</workTypeCode>
        <payTypeCode>3</payTypeCode>
      </employee>
    </employees>
    <staffingHours processType="replace">
      <staffHours>
        <employeeId>EM123456</employeeId>
        <workDays>
          <workDay>
            <date>2015-04-01</date>
            <hourEntries>
              <hourEntry>
                <hours>5.84</hours>
                <jobTitleCode>5</jobTitleCode>
              </hourEntry>
              <hourEntry>
                <hours>2.2</hours>
                <jobTitleCode>7</jobTitleCode>
              </hourEntry>
            </hourEntries>
          </workDay>
        </workDays>
      </staffHours>
    </staffingHours>
    <census processType="merge">
      <month>
        <monthEndDate>2015-04-30</monthEndDate>
        <medicaid>50</medicaid>
        <medicare>60</medicare>
        <other>10</other>
      </month>
    </census>
  </nursingHomeData>

```

**Figure 3: Example PBJ XML File – Removing Termination Date**

```
<?xml version="1.0" encoding="ASCII"?>
  <nursingHomeData xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation="nhpbj_1_00_0.xsd">
    <header fileSpecVersion="1.00.0">
      <facilityId>fac1234</facilityId>
      <stateCode>IA</stateCode>
      <reportQuarter>3</reportQuarter>
      <federalFiscalYear>2015</federalFiscalYear>
    </header>
    <employees>
      <employee>
        <employeeId>EM123456</employeeId>
        <hireDate>2010-02-15</hireDate>
        <terminationDate xsi:nil="true"></terminationDate>
        <workTypeCode>2</workTypeCode>
        <payTypeCode>3</payTypeCode>
      </employee>
    </employees>
  </nursingHomeData>
```

## Appendix A: Data Dictionary Files

As noted above, the data dictionary that was used to produce the data specifications are distributed to assist software developers. The first of these files is the Microsoft Access database (MDB file) that was used to store the data dictionary tables. In addition, the data dictionary tables are distributed as a set of comma-separated value (CSV) files. The most useful tables that are contained in the database are described below.

**Table A1: Database Table Descriptions**

Table Name	Description
itm_mstr	Master table containing one record for every item that is contained in the PBJ item set.
itm_val	Detail table that contains one record for every value (response option) that is allowed for each item. This table is linked to the itm_mstr table using the itm_mstr_key field.
rltn_txt	Contains one record for every edit or information message. The text of each message is stored in each record.
rltn_itm_txt	Contains one record for every edit or information message that is associated with every item. This table was used to generate the detailed data specifications report, the unduplicated edits report, and the supplemental information report.
isc_mstr	Master table containing one record for every item subset code (ISC).

The following table describes the fields that are contained in the itm\_mstr, itm\_val and isc\_mstr database tables described above.

**Table A2: Database Field Descriptions**

Table	Field	Data Type	Field Size	Description
isc_mstr	isc_mstr_key	Number	4	primary key
isc_mstr	isc_id	Text	3	ISC code
isc_mstr	isc_txt	Text	55	ISC description
itm_mstr	itm_mstr_key	Number	4	primary key
itm_mstr	sys_cd	Text	10	"PBJ"
itm_mstr	form_vrsn	Text	10	form version (e.g., "1.00")
itm_mstr	spec_vrsn	Text	20	data specs version (e.g., "1.00")
itm_mstr	itm_srt_id	Number	4	item sort sequence (e.g., 12600)
itm_mstr	itm_id	Text	30	item ID code
itm_mstr	itm_db_id	Text	30	item database ID
itm_mstr	itm_shrt_label	Text	50	item short label
itm_mstr	itm_sect_srt_id	Text	2	item section sort ID (e.g., "01", "02")
itm_mstr	itm_sect_label	Text	10	item section label (e.g., "Header")
itm_mstr	itm_type_cd	Text	10	"Text", "Date", "Code", "Number"
itm_mstr	itm_vrsn_notes	Memo	0	Notes describing changes since previous specs version
itm_mstr	isc_active	Text	80	ISC list: item is active
itm_mstr	isc_inactive	Text	80	ISC list: item not active
itm_val	itm_val_key	Number	4	primary key
itm_val	itm_mstr_key	Number	4	foreign key

<b>Table</b>	<b>Field</b>	<b>Data Type</b>	<b>Field Size</b>	<b>Description</b>
itm_val	val_srt_id	Number	4	value sort order within item
itm_val	itm_id	Text	30	item ID code
itm_val	val_id	Text	20	item value
itm_val	val_txt	Text	255	text associated with value

## Appendix B: Labor Categories for Job Titles

Labor Code	Job Title Code	Labor Description	Job Description
1	1	Administration Services	Administrator
2	2	Physician Services	Medical Director
2	3	Physician Services	Other Physician
2	4	Physician Services	Physician Assistant
3	5	Nursing Services	Registered Nurse Director of Nursing
3	6	Nursing Services	Registered Nurse with Administrative Duties
3	7	Nursing Services	Registered Nurse
3	8	Nursing Services	Licensed Practical/Vocational Nurse with Administrative Duties
3	9	Nursing Services	Licensed Practical/Vocational Nurse
3	10	Nursing Services	Certified Nurse Aide
3	11	Nursing Services	Nurse Aide in Training
3	12	Nursing Services	Medication Aide/Technician
3	13	Nursing Services	Nurse Practitioner
3	14	Nursing Services	Clinical Nurse Specialist
4	15	Pharmacy Services	Pharmacist
5	16	Dietary services	Dietitian
5	17	Dietary services	Food Service Worker
6	18	Therapeutic Services	Occupational Therapist
6	19	Therapeutic Services	Occupational Therapy Assistant
6	20	Therapeutic Services	Occupational Therapy Aide
6	21	Therapeutic Services	Physical Therapist
6	22	Therapeutic Services	Physical Therapy Assistant
6	23	Therapeutic Services	Physical Therapy Aide
6	24	Therapeutic Services	Respiratory Therapist
6	25	Therapeutic Services	Respiratory Therapy Technician
6	26	Therapeutic Services	Speech/Language Pathologist
6	27	Therapeutic Services	Therapeutic Recreation Specialist
6	28	Therapeutic Services	Qualified Activities Professional
6	29	Therapeutic Services	Other Activities Staff
6	30	Therapeutic Services	Qualified Social Worker
6	31	Therapeutic Services	Other Social Worker
7	32	Dental Services	Dentist
8	33	Podiatry Services	Podiatrist
9	34	Mental Health Services	Mental Health Service Worker
10	35	Vocational Services	Vocational Service Worker
11	36	Clinical Laboratory	Clinical Laboratory Service Worker
12	37	Diagnostic X-ray	Diagnostic X-ray Service Worker
13	38	Administration &	Blood Service Worker
14	39	Housekeeping Services	Housekeeping Service Worker
15	40	Other Services	Other Service Worker

### Appendix C: Pay Type Codes

Pay Type Code	Pay Type Description
1	Exempt
2	Non-Exempt
3	Contract

### Appendix D: Work Type Codes

Work Type Code	Work Type Description
1	Full Time
2	Part Time