



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

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Response to Comments Received on ICR #2328.01: **Pressed Wood Manufacturing Industry Survey**

FROM: Robert E. Lee, II, Director *R. E. Lee II*
Economics, Exposure and Technology Division (7406M)

TO: Angela Hofmann, Director
Regulatory Coordination Staff (7101)

In proposing this ICR, EPA provided a 60-day public notice and comment period (73 FR 79083, December 24, 2008) that was later extended an additional 30 days (74 FR 7889, February 20, 2009), so that the comment period ended on March 25, 2009. EPA received four written comments on the ICR that are available in Docket EPA-HQ-OPPT-2008-0717. The comments were from the Composite Panel Association (CPA), the American Forest & Paper Association (AFPA), Temple-Inland Inc., and M. Hibbs. The comments from CPA and AFPA and EPA's responses are described below. The comments from Temple-Inland were incorporated into CPA's comments, and are addressed in the responses to CPA. The comments from M. Hibbs addressed the California Air Resources Board's Airborne Toxic Control Measure to Reduce Formaldehyde from Composite Wood Products, and do not address the ICR. Therefore, no responses are needed to these comments.

Responses to Comments from the Composite Panel Association

Comment 1: There is no particular appreciation that, for most or all of the structural adhesive based products and the non-structural products using ‘structural’ adhesives: phenolic, isocyanate, etc., all of the emission questions are superfluous. Emissions are very low. There should be a way to exempt those products from the survey or limit the response required.

Response 1: EPA does not believe that it is appropriate to exempt the products mentioned by the commenter from the survey, but the Agency has developed a separate questionnaire for some of these products that requests less information in order to limit the potential burden on respondents.

Structural adhesive based products and non-structural products using “structural” adhesives such as phenolic and isocyanate resins are of interest to EPA at this point in its investigation, both to gather information on formaldehyde emissions from products like phenolics, and to better understand the issues related to the use of no-added formaldehyde resins like isocyanates. Therefore, EPA needs to collect the survey information on these products (such as what the emissions levels from phenolics actually are) so that it can have a factual basis to make a determination of whether or not action might be appropriate to address formaldehyde emitted from these products.

In response to EPA’s December 2008 Advanced Notice of Proposed Rulemaking (ANPR) on formaldehyde emissions from pressed wood products (73 FR 73620), commenters stated that emissions from structural products are low. Commenters mentioned that the Air Toxics Control Measure (ATCM) promulgated by the California Air Resources Board (CARB) only regulates particleboard, medium density fiberboard, and hardwood plywood. However, EPA had already reviewed California’s rulemaking record, and EPA did not find the studies CARB relied on to limit its investigation to hardwood plywood, medium density fiberboard, and particleboard to be conclusive. Commenters did not provide new studies or data to support their statements that emissions from other products are too low to be of concern. Therefore, EPA is collecting emissions data through the survey.

EPA notes that the CARB ATCM regulates particleboard, medium density fiberboard, and hardwood plywood (i.e., non-structural products) made with resins such as phenolics and isocyanates (i.e., “structural” adhesives). Such products may be able to qualify as ultra-low-emitting formaldehyde (ULEF) resins or no-added formaldehyde (NAF) resins, which are subject to less stringent regulatory requirements, but they are not exempted from the regulation. Therefore, EPA disagrees that it should exempt non-structural products using structural adhesives from the survey.

EPA also notes that it has received suggestions that it should adopt the Japanese F-star or European E1 requirements for formaldehyde (or variants of these programs) as a national standard instead of the CARB ATCM. The Japanese F-star requirements are not limited to urea formaldehyde resins or to non-structural products, and apply to other resins containing formaldehyde (such as phenolics). And the European E1 requirements apply to oriented strandboard (OSB) and laminated veneer lumber (LVL) as well as to hardwood plywood, medium density fiberboard, and particleboard. This is another reason why it is appropriate for the survey to collect information on structural products and on non-structural products using structural adhesives.

EPA believes that it would be premature to prejudge its investigation by exempting these products from the survey at this time. Also, EPA is interested in the production process issues and in the potential health and environmental impacts of the resins (such as phenolics or isocyanates) that might be used if companies substitute away from urea formaldehyde resins. So the survey is designed to gather information on the particular resins being used, and not just to identify the level of formaldehyde

emissions. To the extent that some companies have experience using resins other than urea-formaldehyde, it is important for EPA to understand the issues that they have had to address, or expect to address. The survey asks for this information as well.

In lieu of these factors, it would not be appropriate to exempt structural products or non-structural products using ‘structural’ adhesives from the survey. However, EPA does recognize that companies making products not subject to the CARB ATCM are less likely to have invested significant effort into investigating how they could lower formaldehyde emissions from their products and what the impacts of the changes would be. The questionnaire is designed to be completed with information that should be readily available to a knowledgeable plant representative. These manufacturers are unlikely to have as much readily available information to use responding to the survey. Accordingly, EPA has developed a separate questionnaire for manufacturers of hardboard and structural composites. As the commenter has suggested, the questionnaire for hardboard and structural composite manufacturers asks for a much more limited set of information.

Thus, EPA now has two separate survey instruments, one for manufacturers of hardwood plywood, medium density fiberboard, and particleboard (referred to in the responses to the following comments as the “**HWPW/MDF/PB questionnaire**”) and one for hardboard and structural composite manufacturers (referred to as the “**HB/SC questionnaire**”).

Comment 2: The confidential business information (CBI) check off needs to be more prominent.

Response 2: The CBI check off has been made more prominent.

Comment 3: One thing that complicates the tables is that the survey approaches the concept of “product grade” solely on binders/resin technology and formaldehyde emissions. It has nothing to do with performance or quality standards like the ANSI standards, which incorporate physical and mechanical performance along side emissions.

Response 3: For the purpose of its initial proposed survey, EPA had defined “product grade” based on binders/resin technology and formaldehyde emissions. However, even with this definition, the term “product grade” had a different meaning to many in the industry.

To reduce confusion, EPA has replaced the term “product grade” with the term “adhesive/emissions class”, defined as “a class of pressed wood products that differs from others based on binder/resin technology, formaldehyde emission certification standard category, and/or formaldehyde emission profile.”

In order to reduce reporting burden, respondents are instructed that they do not need to report separately for products that have the same formaldehyde emissions profile but differ only based on physical characteristics such as thickness, density, or strength. The survey does not collect information on the basis of performance or quality standards like the ANSI standards because binders/resin technology and formaldehyde emissions are the topics of primary interest to EPA.

Comment 4: EPA needs to be clear that this survey only applies to primary wood products producers, some of whom also produce secondary wood products. That appears to be that the case [*sic*] and it certainly should be.

Response 4: EPA plans to send the survey to primary wood products producers, some of whom also produce secondary wood products. EPA is interested in understanding the resins used in manufacturing secondary products, so it is asking respondents who also produce secondary products to provide that information through a question in the HWPW/MDF/PB questionnaire.

Comment 5: What a mill plans to do and what really happens is very much a function of how bold the change is. Simple changes are much more predictable. Frankly, even the recession is a key driver regarding any change at all. Today, few changes can be solved with capital. Until the recession is over, there is more likelihood of shutdown than technology change. This may be the only good thing about the recession. Now it can be spoken of as a ubiquitous, nationwide issue - not just Wood Product markets.

Response 5: This is not a direct comment on the questions in the survey, so no change to the survey or further response to the comment is necessary.

Comment 6: Questions 3 & 4: Often, the mailing and physical addresses differ. Space should be provided for both.

Response 6: The survey has been revised so that space is provided for both the mailing and physical addresses.

Comment 7: Questions 7 and 8: These questions should be part of the survey and not Auto-Filled. For questions 7.b. and 8.b. a definition of revenue should be included. Is this gross, net, etc.??

Response 7: In order to limit respondent burden, EPA believes it is appropriate to pre-fill the general manufacturing information in Section I of the survey, including Question #7(b) (the revenues of the parent company) and Question #8(b) (the revenue of this plant). The pre-filled revenue information will be taken from publicly available sources such as Dun & Bradstreet. However, since that information may be missing or incorrect, respondents can revise the pre-filled information if necessary. EPA has clarified in the survey instructions and in the questionnaire that respondents can edit all of the pre-filled information, including the revenue data. EPA has also clarified in the survey that Questions #7(b) and #8(b) are referring to gross revenue.

Comment 8: Question 8: 2008 employment revenues are skewed by the recession. For a more realistic picture, EPA may want to ask for an average of the last 3 or 5 years. 5 years coincides with Question 9. Also, it is important that the revenue and employee numbers are consistent. For example, 2008 annual revenue should not be compared to 2008 year-end employee numbers as the numbers probably changed during the year. The employee numbers probably need to reflect the monthly average for the year.

Response 8: EPA has changed these questions to ask about 2009 employment and revenues, but acknowledges that both 2008 and 2009 data are skewed by the recession. However, EPA has not changed the question to ask for average employment and revenues over the last 3 or 5 years, or to ask respondents to report employment based on monthly averages for the year. EPA is trying to balance the additional burden on survey respondents of calculating such averages with the value of the additional information to the Agency. Industry projections are that demand for pressed wood products will increase starting in 2010, causing both prices and volumes to increase. EPA recognizes that using 2009 employment and

revenue data in its analyses may tend to overstate the economic impact of potential policy options to address formaldehyde emissions from pressed wood products.

Comment 9: Question 10: Is the Table in Question 10 for facility specific products only?

Response 9: The survey has been clarified to explain that Question #10 in the HWPW/MDF/PB questionnaire is asking about an individual plant (i.e., it is facility-specific and not company-specific). Note that with the exception of some of the parent company information in Section 1, all of the questions in the survey are facility-specific and not company-specific. (Although it is possible that staff at the plant completing the survey may need to contact staff at the headquarters or elsewhere in the company for information to complete the survey.)

Comment 10: Questions 11-13: The tables need a “Not Applicable” code. N/A is different than “None” as it’s defined in Table 11.

Response 10: A code for “Not Applicable” (N/A) has been added to the code categories at the bottom of the table, which is now Question #14 in the HWPW/MDF/PB questionnaire and Question #10 in the HB/SC questionnaire.

Comment 11: Question 11: In the Binder/Resin Categories, no option has been provided to plants running hybrid systems. PB & MDF are frequently manufactured with a three-layer, face-core-face construction and the face and core layers can use different resins. The categories and each column need to allow for this situation.

Response 11: The question (now Question #14 in the new HWPW/MDF/PB questionnaire) has been modified to indicate how plants running hybrid systems can report different resins for face and core layers by reporting both resins and indicating which is for the face layer and which is for the core layer.

Comment 12: Question 11: In the Certification Standard Categories, the NAF (No-added Formaldehyde based resins) and ULEF (Ultra-Low-Emitting Formaldehyde Resins) categories specified in the CARB regulation are not listed. These categories should be added.

Response 12: The survey has been revised so that the question (Question #14 in the HWPW/MDF/PB questionnaire) includes the codes “CA-2 (ULEF)” and “CA-2 (NAF)” for the ULEF and NAF certification standards.

Comment 13: Question 11: The format is confusing regarding products and grades and could be clarified and simplified. For instance lowest emitting products are NAF or ULEF. These products also represent different grades. This confusion could be resolved by having column 3 used to indicate the Emission Certification, then the Binder/resin category columns for face and core adhesives would follow for columns 4 and 5. Thus, the existing columns 6, 7 and 8 could be eliminated. The most stringent of the mix listed could be identified with a checkbox column taking the place of the existing Column 6.

Response 13: EPA appreciates the suggestion, but has taken a different approach to revising the question (which is now Question #14 in the HWPW/MDF/PB questionnaire). The changes include separate certification codes to report NAF and ULEF products, and instructions and a sample response on how to

report different face and core adhesives. EPA believes that these revisions clarify the question and address the commenter's concerns.

Comment 14: Question 11: In column B, LEED is a prescriptive standard, not an emission certification. This could be a confusing example.

Response 14: In order to avoid confusion, the survey has been revised to drop LEED as an example certification standard. (Certification standards are now listed in Question #14 in the HWPW/MDF/PB questionnaire and Question #10 in the HB/SC questionnaire.)

Comment 15: Question 11: In column C, how do we respond if we plan to meet CA-2, E1 or F****, but do not yet know what resin system we will use?

Response 15: Question #11 in the draft survey has been replaced with Questions #14 and #15 in the HWPW/MDF/PB questionnaire. If respondents are not sure which changes they will make because they are still considering more than one possible resin technology (e.g., both enhanced UF resins and soy-based resins), they should respond to Questions #14 and #15 on the basis of the resin they are most likely to use.

Comment 16: Questions 11, 12: In column A, certain physical property based grades such as door core have separate emission considerations and we would list them as separate grade here, correct?

Response 16: EPA has revised the survey to replace the term "grade" with the term "adhesive/emissions class", which is defined as "a class of pressed wood products that differs from others based on binder/resin technology, formaldehyde emission certification standard category, and/or formaldehyde emission profile." If door core or other physical property based grades have separate emissions considerations, they should be reported separately.

Comment 17: Question 12: Recognizing the issue of emission decay, in the introduction there should be recognition that the queries relate to emissions from products tested within typical certification time frames, within 30 days of production.

Response 17: The survey instructions for this question (now Question #15 in the HWPW/MDF/PB questionnaire and Question #10 in the HB/SC questionnaire) have been revised to explain that the emissions levels reported should only include those from products tested within typical certification timeframes (i.e., tests performed within 30 days of production).

Comment 18: Question 12: In column B, should we report the maximum as the maximum in the standard we are meeting? Why should we report the average since very few Large Chamber Tests have been performed for a given product? Also, there is no time period specified for current average and maximum.

Response 18: The survey has been clarified to explain that the question (now Question #15 in the HWPW/MDF/PB questionnaire and Question #10 in the HB/SC questionnaire) is asking about the measured maximum emissions for the product, and not the maximum emissions level allowed by the

standard. For some plants, the measured maximum may be the maximum allowed by the standard. But for other plants, the measured maximum may be less than the maximum allowed by the standard. In considering the risks due to formaldehyde emissions from pressed wood, EPA believes it is important to know the extent to which actual emissions are less than the level allowed by the standard. The survey asks about the emissions standard that is being met, and EPA already knows what the maximum levels allowed by the different emissions standards are. The survey is intended to collect plant-specific data that EPA does not otherwise have access to (i.e., the actual emissions level).

Regarding the question about reporting the average emissions level instead of the maximum, EPA did not intend to limit responses to Large Chamber Test results. The survey has been revised to explain that respondents should respond based on any standard test method they have used to collect data, including various small chamber test methods. (Although respondents to the HWPW/MDF/PB questionnaire are requested to report results as large chamber equivalent emissions if possible. From conversations with manufacturers, EPA believes that most of these respondents will be able to do so without any difficulty.) While many manufacturers may only perform a Large Chamber Test once a quarter, small chamber results may be performed as often as once a manufacturing shift. Therefore, EPA believes that there is sufficient data available for respondents to provide meaningful data on average emissions.

Regarding the question on the time period to use to calculate emissions, the survey instructions have been revised to specify that if the adhesive/emissions class has been manufactured for a full year or more, the current average and maximum emissions should be reported over that one year period. If the adhesive/emissions class has been manufactured for less than a year, the current average and maximum emissions should be calculated over whatever time period the adhesive/emissions class has been manufactured (i.e., if the adhesive/emissions class has only been manufactured for 6 months, calculate the emissions over 6 months).

Comment 19: Question 12: The “Previous” time period of 5 years contributes confusion for PB, especially, and to a degree for MDF. The emission guidelines for the CPA Environmentally Preferable Product Specification (EPPS) have changed over the last several years. TI has been very diligent to produce these EPP products. For PB, as an example, the EPP dates and emission limits have been:

- a. EPPS 1-02, 10/1/02: E1333 Emission Limit, 0.30-ppm
- b. EPPS 2-06, 5/10/06: E1333 Emission Limit, 0.20-ppm
- c. EPPS 3-08, 4/1/08: E1333 Emission Limit, 0.18-ppm

As you can see, there are three basic emission levels that will overlap in the five-year period. This could be resolved by simply asking which standards were used for certification in the last five years or just asking for the last emission standard that was used for certification. In general, manufacturers will begin using an upcoming standard many months in advance, so as not to have any inventoried product that does not meet the next regulation limit. The next anticipated limit is CARB phase 2.

Response 19: The survey question that the commenter is referring to has been replaced by Questions #14 and #15 in the HWPW/MDF/PB questionnaire, which address the previous binder/resin category and the previous emissions levels, respectively.

The instructions for the new Question #14 read as follows:

Previous Binder/Resin Category. If you changed resin technology categories *since the beginning of 2005*, indicate the resin technology category that was previously used. If you changed resins

more than once since the beginning of 2005, indicate the resin technology category that was most recently used before the one you currently use. If you have not changed resin technology categories since the beginning of 2005, enter “not applicable” or “N/A”.

The instructions for the new Question #15 read as follows:

Previous Emission Levels. If the current formaldehyde emissions levels listed in Columns 5 and 6 has changed *due to manufacturing changes implemented since the beginning of 2005*, indicate the average and maximum formaldehyde emission rate prior to the current level.

In the example that the commenter provides, the response for “previous” binder/resin category and emissions levels in Questions #14 and #15 should reflect EPPS 3-08. Of course, the response would be different for a plant where the previous binder/resin category did not comply with EPPS 3-08.

Comment 20: Question 12: It appears that question 12 is geared to compare CARB Phase 1 to CARB Phase 2 for general grades of product. If that is the case, it would help if that were just stated up front. In looking at this, the NAF and ULEF grades should be excluded from this question. Is this consistent with EPA’s logic?

Response 20: Many companies making hardwood plywood, medium density fiberboard, or particleboard will respond to this question (which is now Questions #14 and #15 in the HWPW/MDF/PB questionnaire) by comparing CARB Phase 1 and CARB Phase 2, because they are currently making products certified under Phase 1 and plan on making products certified under Phase 2 in the future. However, the questionnaire does not instruct respondents to compare CARB Phase 1 to CARB Phase 2 for an important reason. One of the goals of the survey is to determine the extent to which there are hardwood plywood, medium density fiberboard, or particleboard producers that intend to manufacture products that are not certified under the CARB standards. (This could either be because the products qualify for an exemption under the CARB ATCM or because the products, and any finished goods made from them, will be sold solely outside of California). Thus, while many plants will respond to the survey by comparing CARB Phase 1 and CARB Phase 2, the question does not tell all respondents to interpret the question this way.

EPA disagrees that products made with NAF or ULEF resins should be excluded from the question. The commenter seems to be assuming that the only purpose of the question is to determine whether companies will comply with the CARB ATCM. While that is one of the purposes of the survey, it is not the only one. In order to understand the possible impacts of potential actions to control formaldehyde emissions at the national level, EPA also plans to consider the issues associated with substitute resins. (For example, plants substituting to pMDI resins may implement additional industrial hygiene controls in order to protect the health of their workers.) Thus, EPA seeks information on what resins may be used (which applies to both NAF and ULEF resins), and on what actual formaldehyde emissions levels will be (which applies to ULEF resins). Therefore, EPA is not excluding products using NAF or ULEF resins from the survey.

Comment 21: Question 13: Product category is referred here may not be adequately be defined. If product category is too broadly interpreted, then info will not be reported, or it may be in too big a lump to be meaningful. On the other hand, the term should not be too narrow either. If it is purely based on resin technology, that should be indicated. Within one technology, there can certainly be degrees of how much resin is used depending upon product use and grade standard.

Response 21: The survey appears to conflate two different terms that were used in the original draft of the proposed survey, but which have been changed in the revised survey. The first term (“product category”) represented standard categories such as particleboard, MDF, and hardwood plywood. It does not appear that the commenter’s intent was to address this category (which has now been renamed as “pressed wood category”).

The second term, which dealt with resin technology, was called “product grade” in the proposed survey. However, the term “product grade” had a different meaning to many in the industry than EPA’s definition. To reduce confusion, the survey has replaced the term “product grade” with the term “adhesive/emissions class”, and the definition has been modified to mean “a class of pressed wood products that differs from others based on binder/resin technology, formaldehyde emission certification standard category, and/or formaldehyde emission profile.” EPA believes that this revision, and the additional explanation provided in the instructions, will clarify its intent and result in meaningful reporting that is neither too narrow nor too broad.

Comment 22: Question 13: This table could be re-structured. All the product categories for a plant be included in one table instead of two or more. Six product categories would be sufficient to capture all product types at facilities in the industry. The column 3 description is confusing. “Most Stringent” could be removed from the description and simply title the column “Formaldehyde Emission Standard Category”

Response 22: This question (which is now Question #15 in the HWPW/MDF/PB questionnaire and Question #10 in the HB/SC questionnaire) has been restructured to make it easier to report all of the pressed wood categories and adhesive/emissions classes for a plant in a single table. In addition, as suggested, the term “Most Stringent Formaldehyde Emission Standard Category” has been changed to “Formaldehyde Emission Standard Category”, as the commenter suggested.

Comment 23: Question 14: The definition of Secondary Composite Panel Products needs modification. Particularly the sentence: Examples of secondary composite panel products include, but are not limited to, Filled or Coated Products, High Pressure Laminates (HPL), Hot Stamp Foils, Low Basis Weight Papers (LBWP), Low Pressure Decorative Laminates (LPDL), Medium and High Density Overlays (MDO and HDO), Structural I-joists and beams, and Vinyl Laminate."

Most of the items in the list are not panel products, only the application of these products to the board substrate would be a secondary product. A suggested change would be: "Examples of secondary composite panel products include, but are not limited to, Filled or Coated Products, Low Pressure Decorative Laminates (LPDL), Structural I-joists and beams, Vinyl Laminate or the application of High Pressure Laminates (HPL), Hot Stamp Foils, Low Basis Weight Papers (LBWP) and/or Medium and High Density Overlays (MDO and HDO) to a composite wood panel substrate."

Response 23: Based on this comment, the definition of secondary composite panel products has been revised to read as follows: “Examples of secondary composite panel products include, but are not limited to, filled or coated products, low pressure decorative laminates (LPDL), vinyl laminate, or the application of high pressure laminates (HPL), hot stamp foils, low basis weight papers (LBWP), or medium or high density overlays (MDO or HDO) to a composite wood panel substrate.”

Structural I-joists and beams have been dropped from the definition of secondary product, because the question about secondary products only occurs in the HWPW/MDF/PB questionnaire, which does not ask

about I-joists. I-joists are included in the HB/SC questionnaire, but not as part of a secondary products category.

Comment 24: Question 14: Question 14 could be moved to the end of the report as Questions 15-21 appear to apply only to Primary Product Manufacture. EPA needs to be clear that this table only applies to primary wood products producers who also produce secondary wood products if that is the case.

Response 24: The question about secondary wood products has been moved to the end of the HWPW/MDF/PB questionnaire (where it is now Question #27). EPA only plans to send this questionnaire to hardwood plywood, medium density fiberboard, and particleboard producers, so the question only applies to producers of these products who also produce one of the secondary wood products listed in the definition of secondary composite panel products.

Comment 25: Questions 15, 16, 17: Expect CBI requests for all this information.

Response 25: Respondents are allowed to claim this information as CBI. EPA understands that many respondents may claim their responses to this question as CBI. No change to the survey or further response to this comment is needed.

Comment 26: Questions 15 – 21: All these sections refer to category 1. This is a little confusing. What about category 2, 3, etc.? What does category really mean?

Response 26: The draft survey instructed respondents to report separately for each product category or product grade (as defined in the survey). The category number that the commenter mentions was a designation in the original proposed survey to be used by companies reporting multiple product grades or product categories. The number of categories reported would have depended on the situation at the respondent's manufacturing plant.

In order to remove potential confusion, this "category" reference has been removed from the survey. Where a separate response is needed for a different pressed wood category or adhesive/emissions class (the terms used in the revised survey), the survey instructs the respondent to report the group separately, and explicitly indicate the relevant pressed wood category or adhesive/emissions class the response refers to.

Comment 27: Question 15, 16, 17: It would make more sense to specify this as making changes from previous emissions levels to those for CARB Phase 1 (this applies for questions 15 through 17).

Response 27: The HWPW/MDF/PB survey has been revised so that there are separate sections that ask about CARB certification, for those respondents that have or will become CARB certified. Section III of the survey, which covers the material addressed in Questions 15 through 17 of the old proposed survey, asks about changes from previous levels to achieve CARB Phase 1 certification. There is a separate section that asks about changes to achieve Phase 2 certification. Since products that don't meet the definition of hardwood plywood, medium density fiberboard, or particleboard aren't subject to CARB Phase 1 or Phase 2, the HB/SC survey does not ask about changes to achieve CARB certification.

Comment 28: Question 15, 16, 17: The significance the year 2004 reference is unclear. Could the significance of year 2004 be explained?

Response 28: The year 2004 in these questions in the proposed survey corresponds to the five year time frame discussed in earlier questions. EPA is asking about the past five years to get a long term perspective about any changes that have occurred, and for which information is still readily available. The proposed survey asked about the five year period from 2004 to 2008. Since the survey will not be sent to pressed wood manufacturers until 2010, the questions in the revised survey that ask for information from the last five years have been reworded to address the period of 2005 to 2009.

Comment 29: Question 15, 16, 17: For sub-question “b”, it would make sense to say years not “year” as there are going to be several changes rather than one change.

Response 29: Sub-question “b”, which asked about what year changes to reduce formaldehyde emissions took place, has been dropped from the survey. But the survey instructions have been revised elsewhere to acknowledge that changes may have taken place over multiple years.

Comment 30: Question 15, 16, 17: Does the agency want to see the last change to meet CARB Phase 1, or each of the series of changes from a particular date, or to combine the changes that occurred from 2004 or some other date?

Response 30: The 2004 date has been dropped from this series of questions in the HWPW/MDF/PB questionnaire. The questions now ask about the sum of all of the changes specifically to become CARB Phase 1 certified. The questionnaire now includes the following illustrative explanation:

For example, if you are a particleboard manufacturer who:

1. Made changes to your adhesive system to meet the CPA EPP Grademark formaldehyde emission limit of 0.30 ppm,
2. Then made additional changes to meet the revised CPA EPP Grademark formaldehyde emission limit of 0.20 ppm,
3. Then made additional changes to meet the CARB Phase 1 formaldehyde emission limit of 0.18 ppm,

Your responses should only reflect the changes you made to reduce your formaldehyde emissions from the 0.20 ppm limit to the 0.18 ppm limit to achieve CARB Phase 1 certification. If you made multiple changes to reduce your formaldehyde emissions from the 0.20 ppm to 0.18 ppm, report the sum of all of those changes.

This should clarify the intent of the questions about which changes to meet CARB Phase 1 should be included in the response.

Comment 31: Question 15, 18: One aspect of the questions that will be more difficult to answer is the reference to data of changes, either in the past (Q 15b) or in the future (Q 18b) since many of those changes happened were incremental rather than drastic changes.

Response 31: The questions about the dates when past changes occurred, and future changes are

expected to occur, have been dropped from the survey.

Comment 32: Question 15: Report all changes since 2004 or just the most recent?

Response 32: As described in the response to Comment #30 above, the 2004 date has been dropped from this series of questions, and replaced with questions about the sum of all changes specifically to become CARB Phase 1 certified. If there were multiple changes to meet CARB Phase 1, the response should reflect the sum of all of them. However, responses should only describe the changes to achieve the CARB Phase 1 standard, and not any earlier changes. (Similarly, responses to the question about changes to meet CARB Phase 2 should report the sum of all the changes to meet Phase 2, but not any changes made to meet Phase 1 or any other emissions levels or standards.)

Comment 33: Questions 16, 19: The question does not address "press issues such as sticking, buildup and cleaning."

Response 33: The HWPW/MDF/PB questionnaire has been revised to address this issue. It is included in the new Questions #17(a), #20(a), and #23(a).

Comment 34: Question 16: These sections should have a space for comments under all sections a-g, not just selected sections.

Response 34: The questionnaire has been revised to include space for optional comments to clarify or explain the responses to many of the questions. In order to conserve space, instead of providing separate comment spaces for each sub-question, the space allows comments about any of the sub-questions under a question.

Comment 35: Question 17: Major changes take a while to settle in. With as much market/furnish downtime as we have experienced, we can't report stable production cost changes and investments - they are in flux and ongoing. The question seems to imply that the responder is on the downstream end of a major change, standing at a stable point. In many cases, that is not yet true - after a year or more.

Response 35: Several changes have been made to the HWPW/MDF/PB questionnaire to address this issue. In the revised survey, Questions #16 and #19 (addressing CARB Phase 1 and Phase 2, respectively) have a sub-question "c" that asks whether changes to production processes are "fully optimized", "nearly optimized", "partially optimized", or "not optimized". EPA will take these answers into consideration when reviewing the responses to other questions.

Also, sub-question "d" under these questions asks if estimates are available for additional costs to optimize production processes. Also, Section V, which asks about planned changes to achieve CARB Phase 2 certification, asks respondents to complete the section if they have already achieved Phase 2 certification but expect to make additional changes in production processes or raw materials in order to optimize production processes. Because production changes may be ongoing and may not have reached a stable point, EPA recognizes that responses to some of the questions in the survey may be based on estimates, extrapolation, or best professional judgment.

Comment 36: Question 17: Section C may not adequately address the huge difference in a resin technology change - seems to be based on +/- within a fixed resin technology such as UF.

Response 36: This comment was addressing how the survey addressed changes in materials costs (resin prices, resin usage, additive costs, etc.) to reduce formaldehyde emissions. (The comment was on Question #17(c) in the proposed survey, but this material is addressed in Questions #18(d) and #21(d) in the revised HWPW/MDF/PB questionnaire.) EPA believes that the survey does adequately address the potential impacts of a change in resin technology. Looking beyond the sub-question to the entire question, Questions #18 and #21 address issues such as research and development costs, capital costs, labor costs, energy costs, other operating costs, product reject rates, productivity and downtime. The questions also provide space where the respondent can indicate that the change had “Other” impacts, and can explain what those impacts were. The two sets of preceding questions (Questions #16 – 17 and #19 – 20) also allow respondents to provide additional information on the types of changes that were made to production processes due to a change in resin technology. EPA believes that when considered together, these questions adequately address the impacts of changing to a different resin system, as well as a change within a fixed resin technology such as UF.

Comment 37: Question 17: In sections f, g and h the question should ask whether the change is fully implemented and stable or still in the continuum of change. The answers will be more meaningful. For example, a mill can accept a higher reject rate during experimentation and implementation than it can during stable production.

Response 37: To address this comment, EPA has added sub-questions that ask about whether changes to production processes are “fully optimized”, “nearly optimized”, “partially optimized”, or “not optimized”. These are in Question #16(c) and #19(c). For additional explanation, see the response to Comment #35, above.

Comment 38: Question 17: Are all these estimates totals since 2004?

Response 38: The reference to 2004 has been removed from this set of questions. Section III in the HWPW/MDF/PB questionnaire now instructs respondents to report the sum of all changes to achieve CARB Phase 1 certification, and Section IV instructs them to report the sum of all changes to achieve Phase 2 certification.

Comment 39: Questions 18 – 20: It would make more sense to specify that this addresses making emission changes from CARB Phase 1 to CARB Phase 2 levels.

Response 39: Section IV in the revised HWPW/MDF/PB questionnaire (which covers the material in the old Questions #18 – 20 that the comment is addressing) now addresses changes to achieve CARB Phase 2 certification.

Comment 40: Questions 18 – 21: Does N/A mean not applicable or not available? “Unknown” should be included as a selection.

Response 40: As explained in the list of abbreviations in the survey instructions, “N/A” means “Not applicable”, “UA” means “Unavailable”, and “UK” means “Unknown”.

Comment 41: Question 19 and 21: I am not clear on the distinction between questions 19 and 21. Question 19 asks for issues the plant is expected to address, while 21 asks for issues the plant would need to address. I would need a clearer explanation of how my response should distinguish between these two approaches.

Response 41: EPA has significantly revised the survey to clarify and distinguish the information it was asking for in these questions. As background, Question 19 in the original proposed survey asked about issues the plant *expected* to address due to *planned* reductions in formaldehyde emissions, and Question 21 asked about issues the plant would address if they were required to make *further* reductions in formaldehyde emissions, *beyond* what was currently planned. The intent of the original Question 21 for plants making hardwood plywood, MDF, or particleboard that were (or intended to become) CARB Phase 2 certified was to ask about reductions in formaldehyde emissions to levels *lower than* the CARB Phase 2 standards. For hardwood plywood, MDF, or particleboard plants that did not intend to become CARB Phase 2 certified, and for plants making pressed wood products other than hardwood plywood, MDF, or particleboard, the intent was to address *any* reductions in emissions (since there may not have been any *planned* emissions reductions for these plants to report in the original Question #19).

In order to clarify the intent of the questions and avoid confusion, separate sections have been created in the HWPW/MDF/PB questionnaire that address planned changes to achieve CARB Phase 2 (Section V of the questionnaire), issues that may affect the ability to reduce formaldehyde emissions for respondents who do not intend to become CARB Phase 2 certified, and issues that may affect the ability to use a No Added Formaldehyde resin (Section VII of the questionnaire).

Comment 42: Question 20: Since it will take 12 to 18 more months to work through the reasonable options to develop cost effective CARB Phase 2 options, it is unlikely that any or few manufacturers will have very good data to submit at this time. A good deal of research work, especially in the plant runs, is needed to compare options and determine the operating flaws. If two or more options are in the running by a particular manufacturer, the answers to the subquestions can be very different for each option. How should this be handled? Should there be a separate question for each option?

Response 42: The questions addressed in this comment are now in Section V of the HWPW/MDF/PB questionnaire. If respondents are not sure which changes they will make to achieve CARB Phase 2 certification because they are still considering more than one possible resin technology (e.g., both enhanced UF resins and soy-based resins), their responses in Section V should be on the basis of the resin they are most likely to use. EPA notes that respondents will be completing the survey approximately 12 months after the commenter made this statement. By the time they complete the survey, many companies will have done a good deal of research work on how to comply with CARB Phase 2, so they will have good data to submit.

Comment 43: Question 20: This section would only be answered under CBI.

Response 43: Respondents are allowed to claim this information as CBI. EPA understands that many respondents may claim the responses to this question as CBI. No change to the survey or further response to this comment is needed.

Comment 44: Question 20: Why does this question only address known planned changes? For example, research and development costs will be incurred regardless if they are directly tied to the “planned” change. Where do we account for costs that are incurred, but do not have a “planned” change in resin system according to the definition of “planned”? It is unclear as to where to put costs other than what would be incurred with a “planned” change.

Response 44: The term “planned change” referred to a planned change in emissions levels (such as achieving CARB Phase 2), and was not meant to imply that the plant had decided all of the details of its process changes, such as which resin system to use. Thus, it would be appropriate to report research and development costs that are expected to be incurred to reduce formaldehyde emissions, even if the plant does not know what technology changes will be ultimately be made as a result of that research. Such research and development costs may be due both to R&D activities undertaken in order to decide what technology to use, as well as R&D activities to implement or optimize a new process.

Comment 45: Question 21: There appears to be a misconception about all formaldehyde based resins. Phenol formaldehyde (PF) resin, as apposed [*sic*] to urea formaldehyde, melamine formaldehyde, and urea-melamine-formaldehyde resins does not emit formaldehyde after it is cured. Why isn't PF resin considered a very low emitting resin like MDI, tannin, or soy resins?

Response 45: EPA is aware that different formaldehyde resins (such as UF, MF, and PF) have different emissions rates. However, the available evidence indicates that PF resins do continue to emit formaldehyde after they are cured, although they may emit at a lower rate than many UF resins. EPA notes that CARB also distinguishes between the two groups of resins that the commenter mentions: the first group (PF, MF, MFU resins) may qualify as ULEF while the second group (MDI, tannin, and soy resins) may qualify as NAF resins. EPA believes that the survey questions have been appropriately structured to collect information on different types of resins, including their emissions.

Comment 46: Question 21: Another critical cost, operating, and success variable that has been missed in Question 21, is the need to prevent sticking to press platens and buildup on press platens with certain resin systems. I would suggest that this be added as item “1”.

Response 46: This issue is addressed in the new Questions #25 and #26 in the HWPW/MDF/PB survey by adding Questions #25(d) and #26(b) that ask about sticking and buildup.

Response to Comments from the American Forest & Paper Association

Comment 1: EPA should delay issuance of the ICR while the Agency evaluates from the ANPR process whether it is appropriate to regulate formaldehyde emissions from composite wood products.

Response 1: EPA disagrees that it should delay issuance of the ICR. EPA always believed that it would need both the ANPR and the ICR to evaluate the risks of formaldehyde emissions from pressed wood products, and to determine whether Agency action, including a potential regulation, is appropriate. That is why EPA stated in the ANPR (73 FR 73624) that it would be conducting an industry survey to supplement the information being requested in the ANPR. EPA elaborated in the first Federal Register notice for the ICR (73 FR 79085) that “EPA believes that the public comments on the ANPR will be informative, but will not provide information in sufficient depth, breadth, and uniformity to substitute for this survey.” Indeed, the public comments submitted in response to the ANPR cannot be used to replace the survey. Thus, the ANPR does not negate the need for this ICR.

A key industry trade association recognized that the ANPR does not replace the ICR when it deferred providing certain information in response to the ANPR, and indicated that the ICR would provide some or all of the information that the Agency sought in the ANPR.¹ Specifically, the Composite Panel Association (CPA) noted in its ANPR comments that “Our organization has perhaps the highest profile of the industrial associations impacted by the Advanced Notice of Proposed Rulemaking.” CPA stated that “Our comments also provide *preliminary responses* to the technical and economic questions posed in the ANPR. *More detailed responses will be provided in connection with EPA’s ICR*” (emphasis added). And for some questions in the ANPR, CPA’s only response in their ANPR comments was that “CPA believes the questions asked in this section will be answered in the responses to the ICR survey.”

The detailed information requested in the ICR will allow EPA to better determine whether and how to address formaldehyde emissions from pressed wood products. Therefore, EPA disagrees that it should delay issuance of the ICR.

Comment 2: A recent industry/EPA pilot study, the EPA NCEA study, determined that sensory irritation level was 0.5 ppm and that an effective concentration for moderate sensory irritation was 1.5 ppm. See Kelly *et al.* (2005) (an EPA-funded study which used categorical regression to establish the relationship between concentration and time). A home pilot study, also sponsored by EPA, has determined that the highest concentration of formaldehyde noted in testing a new home was 0.07 ppm immediately after construction and 0.04 ppm four weeks after construction. See Hare *et al.* (1996) and Koontz *et al.* (1996) (Residential Indoor Air Formaldehyde Testing Program Pilot Study to assess the contribution of UF-bonded wood products in both conventional and manufactured homes and to evaluate EPA exposure models at that time). Since the potential indoor formaldehyde levels determined in this study are much lower than even the sensory irritation levels determined in the 2005 study, the TSCA 6(a) risk/benefit analysis is not met, without even needing to consider the cost/benefit part of the analysis. The ICR, on the other hand, raises questions and requests information that will have no practical utility because the potential magnitude and extent of human exposure to composite wood panels already is known to EPA

¹ Composite Panel Association. *Re: Comments in Response to the Advanced Notice of Proposed Rulemaking on Formaldehyde Emissions from Pressed Wood Products, EPA-HQ-OPPT-2008-0627 (FR 73:73620)*. March 19, 2009. Comment #EPA-HQ-OPPT-2008-0627-109.

and is well below a level that would require regulation pursuant to TSCA Section 6.

Response 2: EPA disagrees that the ICR will not have practical utility. The studies the commenter cites do not prove whether potential indoor formaldehyde levels are lower than sensory irritation levels. The commenter has mischaracterized Kelly *et al.* (2005) and it is inaccurate to describe it as an EPA NCEA study, or as demonstrating a sensory irritation level for formaldehyde. Kelly *et al.* was prepared by an EPA contractor and was not reviewed or released by EPA, so it is not an EPA NCEA study. It was a limited “proof of method” investigation of a categorical regression program, not an assessment of the hazard of formaldehyde. Therefore, Kelly *et al.* did not determine a sensory irritation level for formaldehyde. EPA is, however, currently in the process of investigating the sensory irritation level for formaldehyde.

Regarding Hare *et al.* (1996) and Koontz *et al.* (1996), the levels from the home pilot study represent one possible set of scenarios. Formaldehyde levels under other scenarios, (such as in trailers, in other structures with characteristics that could lead to different formaldehyde concentrations, or in structures containing pressed wood products that do not meet CARB or HUD requirements), may significantly exceed those in the home pilot study.² EPA plans to consider information from the home pilot study, as well as more recent information, as part of its investigation into formaldehyde and pressed wood products.

In light of the limitations of the Kelly, Hare, and Koontz studies, EPA disagrees that the potential magnitude and extent of human exposure to composite wood panels already is known to be below a level that would require action by EPA. Therefore, EPA disagrees with the commenter’s claims that EPA can already conclude that the standard for a TSCA section 6(a) determination cannot be met, or that the ICR lacks practical utility.

EPA’s survey will collect data such as the types of resins that will be used to manufacture pressed wood products and the levels of formaldehyde that will be emitted in the absence of any Agency actions. This information will be an important input into EPA’s determination of whether and what type of regulatory or other action might be appropriate to protect against the risks posed by formaldehyde. Thus, the ICR information will have practical utility even if EPA decides to pursue an alternative to a TSCA Section 6 regulation, such as a voluntary program.

²For indications of the formaldehyde concentrations that can result from different scenarios, see for example:

(1) Groah et al. (*Factors that influence formaldehyde air levels in mobile homes*. Forest Products Journal, Vol. 35, No. 2, pp. 11-18) which noted that formaldehyde levels in mobile homes are generally believed to be greater than those in conventional homes for a number of reasons such as inside volume, amount of formaldehyde-containing products used, and differences in air change rates;

(2) CARB. 2005 (*Indoor Air Pollution in California. Report to the Legislature, Pursuant to Health & Safety Code §39930*. California Air Resources Board, Research Division, Sacramento, CA, 2005) which found the average formaldehyde levels in manufactured homes to be over two-and-a-half times higher than those in conventional homes); and

(3) CDC 2008 (*Final Report on Formaldehyde Levels in FEMA-Supplied Travel Trailers, Park Models, and Mobile Homes*, Centers for Disease Control and Prevention, July 2, 2008) which found the geometric mean level of formaldehyde in 519 sampled trailers was 77 ppb, but noted that levels in the study are likely to under-represent long-term exposures because many of the trailers tested were approximately 2 years old, and the study was conducted during the winter.

Comment 3: The ICR extends beyond the composite wood products (hardwood plywood, particleboard, and medium density fiberboard) specified in the TSCA section 21 petition and included by the CARB ATCM. If EPA proceeds with the ICR, then AF&PA believes the focus of the ICR should be restricted to manufacturers of composite wood products rather than expanding to other pressed wood products.

Response 3: EPA has never stated that it would limit its formaldehyde investigation to the three composite wood products included in the CARB ATCM, so the commenter's implication that this is an expansion of EPA's investigation is incorrect. EPA stated in its response to the TSCA section 21 petition (73 FR 36505) that the products regulated by CARB are a subset of pressed wood products:

In this notice, unless otherwise specified, "composite wood products" refers to the three types of wood products (hardwood plywood, particleboard, and medium density fiberboard) referred to in the California regulation. Composite wood products are a subset of "pressed wood products."

EPA went on to note (73 FR 36510) that it would investigate the broader array of pressed wood products:

... EPA believes it is appropriate, in the Agency's discretion, to initiate a proceeding to better understand the risks from formaldehyde in pressed wood products (including the three types of composite wood regulated by CARB) and to assess various alternatives that EPA might pursue to address such risks. ...EPA has decided to initiate a proceeding to investigate whether and what type of regulatory or other action might be appropriate to protect against risks posed by formaldehyde emitted from pressed wood products.

EPA's ANPR (73 FR 73624) was even more explicit about the extent of its investigation when it requested information on pressed wood products:

EPA has identified the following categories of pressed wood products that may be manufactured using urea-formaldehyde (UF) resin and other formaldehyde based resins: Particleboard, medium density fiberboard, hardwood and softwood plywood, waferboard, oriented strandboard, hardboard, parallel strand lumber, laminated veneer lumber, prefabricated I-joists, and glued laminated beams.

The responses to the ANPR did not provide sufficient evidence for EPA to conclude that it should exclude pressed wood products other than composite wood products from its investigation. EPA's survey will collect data such as the types of resins that will be used to manufacture pressed wood products and the levels of formaldehyde that will be emitted in the absence of any Agency actions. This information will be an important input into EPA's determination of whether and what type of regulatory or other action might be appropriate to protect against the risks posed by formaldehyde.

Furthermore, EPA has received suggestions that it should adopt the Japanese F-star or European E1 requirements for formaldehyde as a national standard, instead of the CARB ATCM. The Japanese F-star requirements are not limited to urea formaldehyde resins or to non-structural products, and apply to other resins containing formaldehyde (such as phenolic resins). And the European E1 requirements apply to oriented strandboard (OSB) and laminated veneer lumber (LVL) as well as to hardwood plywood, medium density fiberboard, and particleboard.

Therefore, it is appropriate for EPA's survey to cover additional pressed wood products beyond

those included in the CARB ATCM. However, the questionnaire is designed to be completed with information that should be readily available to a knowledgeable plant representative. In light of the fact that manufacturers of these other products are less likely to have invested significant effort into investigating the feasibility and impacts of reducing formaldehyde emissions, EPA has developed a separate, shorter, questionnaire for manufacturers of hardboard and structural composites.

Comment 4: AF&PA supports adoption by EPA of the ATCM emission standards and testing and labeling provisions as a single, national paradigm for formaldehyde in composite wood panels, but developed in a cooperative effort with industry rather than through an unjustified Section 6 rule. One potential solution would be specific legislation that would adopt regulations similar to the CARB ATCM nationally, making the ICR unnecessary. AF&PA, therefore, suggests that EPA should at a minimum wait to determine if a national legislative approach is a viable solution before issuing the ICR.

Response 4: EPA disagrees that the introduction of legislation mandating EPA to adopt the CARB ATCM emission standards makes the ICR unnecessary. There are at least three reasons it is inappropriate to suspend the survey while Congress is considering legislation. First, because the results of EPA's investigation and analyses, including the information gathered through the survey, may help inform Congress in its determination of whether to adopt such legislation. Second, because it can take years for legislation to be passed into law – and passage might not ever occur. And third, because it is impossible to predict how prescriptively a statute might be written, and the survey results could be useful to EPA in developing implementing regulations if a statute required EPA to select an emissions standard. EPA does not believe it is appropriate to put its efforts on hold while waiting to see whether potential legislation is adopted. Thus, EPA disagrees that it should wait to determine if a national legislative approach is a viable solution before issuing the ICR.

Comment 5: EPA can rely on information collected in its 1998 information collection request pursuant to the development of the National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products, Subpart DDDD, and found at OAR-2003-0048 (Docket#A- 98-44).

Response 5: EPA strongly disagrees that it can rely on information collected in 1998 pursuant to the development of the National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products to provide the necessary information for the current exercise. EPA addressed why it cannot rely on the 1998 survey as part of the justification for this ICR. Specifically, in Part A, section 3(a) (nonduplication) of the supporting statement for this ICR, EPA noted that:

In 1998, EPA surveyed pressed wood manufacturing facilities to gather information to develop a National Emission Standard for Hazardous Air Pollutants (NESHAP) for the Plywood and Composite Wood Products (PCWP) industry. The current survey does not duplicate the PCWP survey. The current survey collects information (such as the level of formaldehyde emissions from pressed wood boards) that was not part of the PCWP survey. Furthermore, in response to changes in market conditions and regulatory requirements, EPA expects that many pressed wood manufacturing plants have changed their operations (including production volumes, resins, equipment, and processes) since 1998, or plan on making changes in the future. To the extent that some of the questions in this survey are similar to those in the PCWP survey, many of the answers that plants will provide may have changed in the intervening decade. Since the current survey will be collecting different and updated information from the PCWP survey, the data collected in 1998 does not fulfill EPA's current needs, and the current survey is not duplicative of the PCWP survey.

The commenter has provided no rationale to support its claim that the information collected pursuant to the PCWP rule would be informative about the current questions that EPA is considering. As described above, the PCWP survey not only addressed a different time period but it collected very different data. The PCWP survey collected data a decade before the CARB ATCM was implemented. There have also been new developments in voluntary green building programs (such as LEED, Green Globes, and the National Green Building Standard), as well as emissions standards in other countries that impact the choice of resins used to manufacture pressed wood products. One of the major purposes of the survey is to understand how pressed wood manufacturers are responding to this shifting landscape of regulatory and voluntary programs. The 1998 PCWP survey does not inform consideration of any of these issues. Therefore, EPA rejects the commenter's claim that EPA could rely on the PCWP survey instead of conducting the survey that it has proposed in this ICR.

Comment 6: The EPA also can rely on work already conducted by the California Air Resources Board prior to the development of the ATCM for formaldehyde emissions from composite wood products. According to comments submitted by the California Air Resources Board to EPA on January 29, 2009: "Among the products tested, ARB staff determined that the products that contributed most to total daily formaldehyde exposure were the three composite wood products that are subject to the ATCM - hardwood plywood, particleboard, and medium density fiberboard. These products were reported to have high surface emission rates (>100 ug/m²-hr) and are used in large volumes in homes, offices, and schools. Few, if any other consumer products, exhibited both high surface emission and usage rates, and for this reason, were not included in the scope of the ATCM."

Response 6: EPA disagrees that the work conducted by the California Air Resources Board (CARB) prior to the development of the ATCM for formaldehyde emissions from composite wood products provides sufficient information for EPA to determine how to address formaldehyde emissions from pressed wood products.

CARB decided to apply the ATCM to particleboard, medium density fiberboard, and hardwood plywood based on its conclusion that "Formaldehyde emission rates from other composite wood products (e.g., oriented strandboard, peg board, etc.) used for exterior applications are about 90% lower and contribute far less to formaldehyde concentration in California."³ This conclusion was based on a 1996 study prepared for CARB.⁴ The 1996 study measured emissions from bare urea-formaldehyde (UF) wood products, coated UF wood products, and bare phenol-formaldehyde (PF) wood products. Only four samples of PF wood products were tested: one sample of hardboard, one sample of oriented strandboard, and two samples of softwood plywood. The 1996 study states that hardboard is also made with UF resins, but no UF hardboard was tested. Nor did the 1996 study not measure emissions using other resin systems based on added-formaldehyde resins, such as melamine formaldehyde (MF), melamine urea formaldehyde (MUF), phenol urea formaldehyde (PUF), resorcinol formaldehyde (RF), or phenol resorcinol formaldehyde (PRF). And the 1996 study only tested products produced domestically, stating that "imported wood products occupy only a small portion of the U.S. market."

³ *Initial Statement of Reasons for the Proposed Rulemaking: Proposed Airborne Toxic Control Measure to Reduce Formaldehyde Emissions From Composite Wood Products*, California Environmental Protection Agency, Air Resources Board, March 9, 2007, p. ES-2.

⁴ *Determination of Formaldehyde and Toluene Diisocyanate Emissions from Indoor Residential Sources*, Final Report, CARB Contract No. 93-315.

EPA does not believe that CARB's 1996 study had a large enough sample size to categorically or conclusively determine the emissions levels from PF products. CARB's 1996 study did not measure emissions from other formaldehyde based resins such as MF, MUF, PUF, RF, or PRF. And it is no longer true that imported wood products occupy only a small portion of the U.S. market. Therefore, EPA believes that it would be inappropriate to rely on the 1996 CARB study to limit EPA's investigation to particleboard, medium density fiberboard, and hardwood plywood.

In the advanced notice of proposed rulemaking (ANPR) on formaldehyde emissions from pressed wood products (73 FR 73624), EPA specifically asked for information on formaldehyde emissions levels from products other than particleboard, medium density fiberboard, and hardwood plywood, and what the applications for such products are. Commenters made reference to California's decision to limit its activity to these three pressed wood products. However, EPA had already reviewed the information in California's record (such as the 1996 study described above), and EPA did not find the studies CARB relied on to limit its investigation to be conclusive. Neither this commenter, nor any other commenter on the ANPR, provided a sufficient response for EPA to make a determination at this time. Therefore, EPA does not, at this time, have a sufficient factual basis to limit its investigation to particleboard, medium density fiberboard, and hardwood plywood. EPA needs the data from the survey to determine whether its investigation should continue to include other pressed wood products.

EPA notes that it received various comments in response to the ANPR suggesting that instead of adopting the CARB standards, EPA should adopt the European E1 standards, the Japanese F**** standards, or standards equivalent to half of the levels required by the E1 or F**** standards. Since the European and Japanese standards cover other pressed wood products in addition to particleboard, medium density fiberboard, and hardwood plywood, EPA can use the survey information to consider the impact of emissions standards other than the CARB ATCM.

To the extent that the commenter is suggesting that EPA can rely on CARB's pre-rulemaking research on the composite wood industry, EPA has already explained why this is not feasible. EPA noted in Part A, section 3(a) (nonduplication) of the supporting statement for this proposed ICR that:

In 2002, the California Air Resources Board (CARB) conducted a survey of particleboard, medium density fiberboard, and hardwood plywood manufacturers. However, CARB's survey was more limited than this survey in terms of the coverage of facilities and the types of information collected. Furthermore, the CARB survey was intended to characterize the state of the market for these three products prior to 2002. Many manufacturers of these three pressed wood products will be changing their production processes in response to the CARB ATCM. EPA is trying to characterize the baseline for the market *after* the CARB ATCM goes into effect, and to determine the costs for potential future actions to control formaldehyde emissions. The information collected through the 2002 CARB survey does not address these issues. Therefore, the current survey is not duplicative of the CARB 2002 survey.

EPA disagrees that it can rely on work already conducted by the California Air Resources Board prior to the development of the ATCM instead of conducting the survey requested in this ICR.

Comment 7: The additional pressed wood products explored in the ANPR (i.e., hardwood plywood, OSB, I-joists, and other engineered wood products) are primarily designed for external or structural use and typically contain resins such as phenol-formaldehyde which have extra low emission profiles that have been well documented. For these reasons, EPA at a minimum should limit any information requests to the composite wood products subject to the CARB ATCM only.

Response 7: EPA disagrees that it should limit the information collection request to the composite wood products subject to the CARB ATCM as the commenter has suggested.

First, the commenter's statement that hardwood plywood is a structural product primarily designed for external or structural use and typically containing resins such as phenol-formaldehyde is incorrect. Hardwood plywood is not a structural product, is not primarily designed for external use, and does not typically contain resins such as phenol-formaldehyde. According to the Hardwood Plywood and Veneer Association, hardwood plywood and engineered wood flooring "are interior, decorative products used in the manufacture of cabinets, furniture, fixtures, floors, and architectural products."⁵ According to the Forest Service, "Hardwood plywood is normally used in such applications as decorative wall panels and for furniture and cabinet panels where appearance is more important than strength. Most of the production is intended for interior or protected uses, although a very small proportion is made with adhesives suitable for exterior service, such as in marine applications."⁶

EPA disagrees with the commenter's statement that the additional pressed wood products explored in the ANPR have been well documented to have extremely low emissions profiles. As discussed in the response to the previous comment, there is limited publicly available data on the emissions from these products (although EPA's discussions with manufacturers indicate that at least some of them have unpublished data on emissions from their products). The ANPR asked for data on emissions from these products, but EPA did not receive data or studies that might corroborate the claims about the emissions from these products. If the commenter has studies that were responsive to EPA's ANPR request (particularly data representative of all such products manufactured in the U.S.), it should have submitted such data in response to the ANPR. This commenter did not do so, nor did other commenters on the ANPR. Thus, EPA plans to collect that data as part of the survey effort.

Furthermore, according to APA – The Engineered Wood Association, it has tested imported structural panel products and found high formaldehyde emissions levels from some of them, particularly panels imported from China.⁷ This is another reason EPA does not believe it would be appropriate to exclude these products from consideration at this time.

While it is true that pressed wood products not subject to CARB are primarily designed for external or structural use, they are also used in interior and non-structural uses. According to APA – The Engineered Wood Association, the industrial market for structural wood panels encompasses a wide and diverse range of applications, from upholstered furniture and kitchen cabinets to crates, pallets, boats and signage. According to APA, the U.S./Canadian industrial market consumed approximately 6.15 billion square feet of structural wood panels in 2008. Consumption of structural panels for industrial applications declined along with the overall economy, as 2008 consumption was almost 11 percent below the 2007 mark and 16 percent below the volume recorded for 2005, when the industry produced a record-setting 43.1 billion square feet of panels. In 2005, the last year for which reliable data are available, imported softwood plywood commanded a 19 percent share of the major industrial markets, while the volume of imported OSB represented about nine percent. APA forecasts that industrial market demand for structural wood panels will decline in 2009 due to the decline in the overall economy, but will grow in

⁵ *Comments of the Hardwood Plywood and Veneer Association (HPVA) submitted to the Environmental Protection Agency (EPA) on the Advanced Notice of Proposed Rulemaking (ANPR) for formaldehyde from certain wood products: EPA-HQ-OPPT-2008-0627; FRL-8386-3, submitted by Kip Howlett, President – HPVA, 3/19/2009, p.3. Comment #EPA-HQ-OPPT-2008-0627-118.*

⁶ *Wood Handbook: Wood as an Engineering Material*, Forest Products Laboratory, USDA Forest Service, General Technical Report FPL-GTR-113, p. 10-7.

⁷ *Industrial Strength* by Jack Merry. *Engineered Wood Journal*, Spring 2009, p. 23.

2010 and succeeding years.⁸

APA is actively marketing the use of structural panels for industrial uses. The centerpiece of the Association's industrial market promotion is performancepanels.com, an APA web site devoted exclusively to the features and attributes of structural wood panels for industrial market application. The site discusses the use of structural panels in furniture manufacturing, and notes that "The trend today is toward increased usage of proprietary furniture grades of plywood and oriented strand board (OSB) for furniture frames." The site also discusses the use of structural panels in residential cabinets, countertops, and shelving, in commercial furniture, cabinets, and displays, and in various other industrial applications such as mezzanine floors, trucks and railcars, and boats.

As another example of how products typically used for exterior or structural uses are also used for interior or non-structural uses, the following table indicates such uses for laminated veneer lumber (LVL):

Laminated Veneer Lumber (LVL) Uses

Product	Structural	Product	Structural
Airplane parts	Yes	Ladder stock	Y
Animal pens	N	Laminated beams	Y
I beams	Y	Load stickers	N
Bridges	Y	Molding	N
Composite lumber	Y/N	Office partitions	N
Concrete forming	Y	Open web chord	Y
Core material	Y/N	Pallet spacers	N
Decorative art	N	Ridge beams	Yes
Decorative beams	Y/N	Rim joists	Y
Dimension lumber	Y/N	Scaffold	Y
Divingboard core	Y	Ship decking	Y/N
Door rails	N	Siding	N
Door stiles	N	Sign posts	DESIGN
Facia	N	Ski cores	DESIGN
Flooring/dec	No	Stadium seating	N
Furniture stock	N	Truck decking	Y
Gin skids	N	Truss chords	Y
Headers	Y	Utility poles	Y
I flanges	Y	Wind turbine	Y
Joists	Y	Window frames	Y/N
Kiln sticks	N		

Source: *Plywood and Veneer-Based Products: Manufacturing Practices*, Richard F. Baldwin, Forest Products Society, 1995, p. 6.

While EPA has not determined whether or not formaldehyde emissions from the engineered wood products mentioned by the commenter present a risk that needs to be addressed, the Agency believes it would be inappropriate to prejudge the issue by excluding these products from further consideration at this time. EPA is including these products in the survey to further such consideration.

⁸ *Industrial Strength* by Jack Merry. *Engineered Wood Journal*, Spring 2009, pps. 20-23.

Comment 8: EPA likely has significantly underestimated the burden of the proposed ICR. The extensive data collection reflected in the ICR would require a substantial amount of effort by industry and even more effort by EPA to analyze the data in support of a possible rulemaking.

Response 8: EPA disagrees that it underestimated the burden of the ICR. Responding to the survey does not require extensive data collection or a substantial amount of effort by industry. The survey asks for readily obtainable information, e.g., information known or easily accessed by the plant staff. The plant does not have to generate new information to respond to the survey. If anything, the available evidence indicates that EPA may have overestimated the burden of the ICR.

EPA originally estimated that the burden of responding to the survey would average 19.6 hours per respondent. After publishing the initial draft of the ICR, EPA conducted a pretest of the draft survey with 5 pressed wood manufacturers. Staff at these manufacturers completed the questionnaire and returned it to EPA. The companies were asked afterwards how many hours it took to read the instructions, compile the information, coordinate responses, fill out the form, and return the questionnaire. The burden hours per respondent reported by these companies ranged from 4 to 24 hours per plant, with an average of 13 hours.

EPA has data from actual respondents indicating that the average time to complete the survey from start to finish was 13 hours, which is less than the 19.6 hours estimated in the ICR. By contrast, the commenter has provided no comparable data or evidence to support its claim that EPA has underestimated the burden.